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NEUROSARCOIDOSIS

OSTEOPATHIC MEDICINE IN SOUTH CAROLINA

VOLUME 83
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JANUARY 1987

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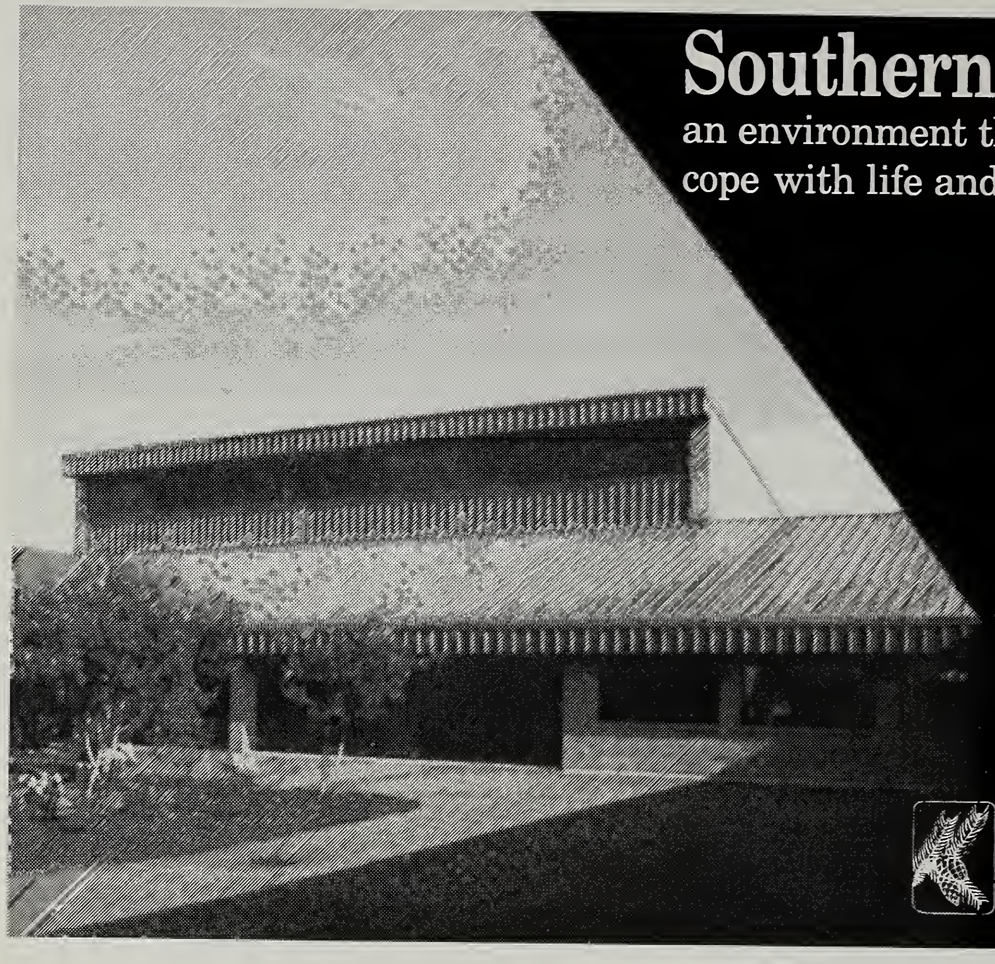

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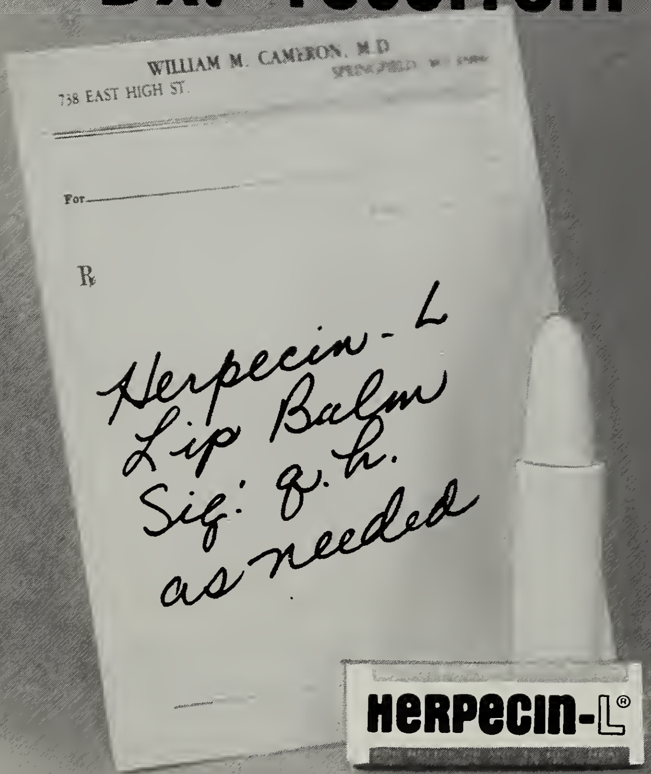

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President's Page

THE CHAMPUS "REFORM INITIATIVE": WHITHER GOVERNMENTAL HEALTH CARE FINANCING?

Two or three months ago in the President's Page, I mentioned to you that the federal government is beginning innovations in ridding itself of health care financing. I mentioned that the Department of Defense (DoD) was beginning a "reform initiative" to capitate CHAMPUS, the medical care plan for military dependents and retirees.

This is moving forward at such a rapid pace, and is so crucially important — as a "prototype" of things to come — that I want to devote this current editorial to it. Many believe — I believe — it is one of the more important trends in governmental health care endeavor since the advent of Medicare.

The current idea is to divide the country into six regions, and to provide a fixed amount of money — "capitation" — to each. The exact number of CHAMPUS beneficiaries which exists is uncertain, since many are transient and difficult to keep up with, and many retirees and dependents of military personnel simply don't use CHAMPUS. The number is probably around 6.2 million people. Of this number, at least thirty percent reside in four states in the southeast: Georgia, Florida, North Carolina and South Carolina.

The DoD initiative to begin such a reform is taking a path of three pilot projects. California and Hawaii, Georgia and Florida, and North Carolina and South Carolina are to be three two-state subregions where contracts are to be let to some health care provider. Many of the health insurance organizations, most especially Blue Cross/Blue Shield of South Carolina, are looking at the possibility of providing this service. We feel sure that others such as Provident, Hartford, and other "blues" will do likewise. It is also probable that hospital run HMOs such as the Hospital Corporation of America will be bidding for such a contract.

The question which presents itself to the physicians of South Carolina is where do we fit in in this plan? Should we in some fashion try to enter into these negotiations? Or should we, as we have perennially done, allow some fiscal intermediary to decide once more for us how the program will run, how much will we be paid, what will be the constraints on laboratory studies, prescription writing, physician visits, hospital usage?

To tell you exactly what SCMA is attempting to do is premature at this point. As a matter of fact, we don't know as yet. However, since we are viewed by DoD as one of the three important areas of the country for a "trial run," Bill Mahon and I have already been in dialogue with the three physician owned HMOs in the state and in dialogue with involved physicians in North Carolina about this "pilot project." We are considering a possible statewide Independent Physicians' Association (IPA) which can "network" our existing HMOs — certainly not to compete with them — and incorporate other South Carolina physicians into the network in some fashion. In this way, perhaps the physicians of South Carolina, instead of an insurance titan or hospital HMO, can be in a negotiating position.

DoD wants action *quickly*. Bids are to be filed by April, 1987, early implementation by the first of 1988, and "phase in" of the entire population of CHAMPUS recipients over the ensuing two years in this schedule.

We will continue our discussions at state level on January 9, 1987, at the Board of Trustees meeting, and meet again with state HMOs and the North Carolina contingent in mid-January. We perceive these decisions to be crucial and vital, as we have stated, not so much for providing health care benefits for this one segment of our nation's people as for the continuing prospects of a government divesting itself of health care financing of programs such as Medicare, Medicaid, Workmen's Compensation and similar plans.

Walt Roberts

Walter J. Roberts, Jr., M.D.
President

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President's Page

THE PHYSICIAN AND THE PARAPROFESSIONAL

At a recent meeting of the Board of Trustees of the SCMA, we discussed legislation which is to be filed regarding formation of a Board of Social Workers. Among the suggested "social work practices" which are tentatively planned is the statement that "counseling and the use of applied psychotherapy" be a prerogative of social workers. I am sure that at some point there is to be promulgated a fee for such services, though this is not clear in the bill. SCMA plans to oppose this part of the legislation.

Reviewing this proposed bill makes me think once more about our relationship to "ancillary" professional groups. There are, of course, groups which have a level of autonomy which does not require them to look to physicians for surveillance — such as nurses, pharmacists, podiatrists and optometrists. Nurses and pharmacists, happily, often turn to physicians for advice and support in their endeavors.

There are, in addition to the social workers, other "paraprofessional" groups who are aggressively seeking "status." Physical therapists, speech and hearing therapists, psychologists and counselors, physician's assistants — many others — are looking for their board's, commission's, licensure, and — of course, fee schedules. They often have persuasive arguments, especially when they approach our lawmakers and existing boards.

There is a much more suspect group of hangers-on for which I have less regard and less clear definition of their worth; indeed, if truth be known, I have great disdain for their motives and practices. I speak of health food stores, vitamin plans, sun tanners, faith healers, weight reducing parlors — and the most contemptuous of all — chiropractors. It has always been my belief that one may believe in medicine or in "chiropractic," certainly not in both. Several physicians in the state have gone into "practice" with chiropractors. Their action is beneath my contempt.

The question to be asked is, "What is medicine's part in training, surveillance, regulation and licensing of these various groups?" It is my firm persuasion that our part is now — and evermore should be — total involvement and active participation.

Medicine has always been — to me — a pyramid. At the apex must be the physician. All power and all intelligence need not emanate from the apex, but much of it should. It is to the ultimate benefit of our patients that we occupy this position of knowledge and surveillance and we must not abdicate to any group.

Implicit in this statement is that we properly train and properly discipline ourselves. One of the things I've always liked most about being a physician is our willingness to do so — by example first, and if not by example by other more forceful means. Let us keep this commitment to excellence in the quality of our own work, to maintenance of high moral and ethical standards personally as well as professionally, so that by action and example we may be fit determiners of what is worthwhile for "paraprofessional" groups.

Walt Roberts

WALTER J. ROBERTS, JR., M.D.
President

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President's Page

SCMA AND THE STATE'S AGENCIES

One of the most important tasks which falls to your SCMA to perform — day in, day out — is communication with state agencies. Those agencies by law and by regulation carry out many vital health activities which by their nature would be very difficult for the private sector to perform. They often deal with the segment of the population who seldom seek conventional private medical care. They monitor the activities of factories, laboratories, hospitals and people who, if not functioning properly, could impact disastrously on the health of our patient population. They administer millions upon millions of dollars of public funds, and generally do it quite well.

From the standpoint of health issues — as opposed to financial issues — the Department of Health and Environmental Control (DHEC), the Department of Mental Health (DMH), and the Governor's Health and Human Services (HHS) office are probably the most important agencies with which we need good dialogue. All three have relatively new chiefs, and those chiefs are excellent men. Mike Jarrett has recently been made head of DHEC. By the way, he is the first non-physician ever to occupy that job. Mike is an excellent man who moved "through the ranks" to this important and powerful job. He is capable, energetic and singularly well-informed.

Joe Bevilacqua, who has been at the head of DMH a little longer, is equally well qualified and equally knowledgeable. A Ph.D., Joe came to South Carolina from Rhode Island where he was involved in high level mental health administration. He is a bright and engaging fellow who is bringing new ideas to his department.

The newest guy on the block is Lee Catoe, Governor Campbell's choice to head up his office of Health and Human Services. Lee is from Camden, well trained, smart and with a sparkling story of excellence in his previous job, that of running the Community Relations Council of the Columbia Chamber of Commerce.

There are others with whom we deal: Dennis Caldwell, who has the monumental task of administering funding of Medicaid and indigent care through HHS, with an ever diminishing budget; Jim Solomon, the solid, capable head of DSS; John Richards, the keen and articulate State Insurance Commissioner; our Presidents and Deans of our Medical Schools; and heads of private groups such as the Hospital Association and the Nursing Association. We need good relationships with all these organizations.

The ability of SCMA to talk with these agencies, I am happy to report, has perhaps never been better. I have a strong feeling that when we envision a need or a question arising we should have immediate ability to discuss that need or question with the agency head, or his designee. I also feel, just as strongly, that when a question arises involving the health of the citizens of South Carolina, the agency should turn to SCMA for input and advice.

I hear my colleagues who, like me, are in the private practice of medicine, frequently express frustration with the direction in which medicine is moving. Beset and beleaguered by contract medicine, the threat of DRGs, pricing constraints and mountains of paperwork, we often feel "things can't get worse."

Allow me, therefore, this month, to interject into that doom and gloom reverie a single satisfying thought: consider the tasks which are done for us by our state agencies and be grateful for their existence.

Walt Roberts

— Walter J. Roberts, Jr., M.D.
President

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President's Page

MUSINGS OF A DEPARTING PRESIDENT

Since this is my final President's Page, I hope you will indulge me in some "musings" and some rather philosophical observations. During my year as SCMA President, many good things have happened and I am grateful for those good things. Many thorny and unresolved issues remain, however, and I wish to touch briefly on several of these:

1. At the time of this writing, so-called "tort reform" legislation has been passed by the State House of Representatives and sent to the Senate. This proposed legislation bears little resemblance to a reform. It is an effort to delude the citizens of this state, to try to make them think something is being done. It contains essentially nothing worthwhile. It represents an abdication of responsibility by the House and I am deeply disappointed in House leadership.
2. I believe that the current effort to make physicians part of DRG payments, and the widespread effort to make all physicians "participating physicians" in Medicare, represents continued effort of the governmental entities involved — and this includes the administration and many in Congress — to socialize medicine. It targets physicians as a group of citizens where trade may be restrained, and where freedom to choose prerogatives is disappearing. Moreover, many non-governmental groups, including the "aging" population groups, are applauding and supporting this effort to socialize us. We must fight these efforts.
3. I am distressed over the increasing willingness of physicians to advertise their profession. I am saddened that the most respected of all professions seems to be finding "entrepreneurial" endeavor acceptable.
4. Though we cannot be fully absolved of responsibility, I am tired of hearing that the rapid acceleration in the cost of medical care is because of physicians. The part of this acceleration due to physicians' charges is small when compared to other increasing health care costs. This needs to be more clearly brought to the attention of the citizens of this country.
5. SCMA is a strong, productive, vibrant organization, made so by the work of the involved physician population of the state and by the work of a superb staff, aided by a singularly capable Executive Vice President. For those physicians who are not involved, who are not members, I can only feel sad, since they are missing something in their professional and personal lives which they rightfully should be enjoying. I also feel this is true of AMA, and I look forward eagerly to the time when South Carolina shall be a "unified" state, where component society, state and national membership shall be one.

These several things off my chest, let me now thank you, the members of the SCMA, for allowing me the privilege of being President for the past year. As long as I live — and I hope this will be many years — I will look back upon 1986 and 1987 as perhaps the most fulfilling years of my life. It has been a rare experience, enjoyed by few physicians in the state, and I am genuinely grateful for the opportunity. It has been hard but rewarding work, and I will savor the effort and bask in the accomplishments.

Walt Roberts

— Walter J. Roberts, Jr., M.D.
President

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President's Page

YOU ARE THE KEY!

As my year as your president begins, I must take this opportunity personally, and on your behalf, to express appreciation for a job well done by your leadership and staff.

Walter Roberts has tackled his job as President of the SCMA with a dedication that is a model for us all. His efforts on our behalf and the public's behalf, on multiple issues dealing from tort reform to toxic waste, have been unceasing. One brief glance at his personal calendar for the past year will attest to that.

Your Board of Trustees and its Executive Committee have also exhibited that same desire to serve you and the people of this great state. Their responsibilities extended far beyond the monthly meetings and they have responded well.

The SCMA delegation to the AMA has also provided much for us to be proud of. John Hawk (Charleston) currently serves as Chairman of the Council on Constitution and Bylaws of the AMA and Randy Smoak (Orangeburg) is on the AMPAC Board and serves as its Secretary.

Bill Mahon, our Executive Vice President, and our staff have been equally dedicated. Without them your officers, trustees and delegates would not be nearly as effective.

The SCMA is a strong organization because of the efforts of these people and those who preceded them. The strength of the SCMA also lies in the many physicians across this state who have served on one of its committees. To all of these, thank you.

Much has been done by the SCMA and much is still to be done. In our ever-changing profession and society, that will always be true. Because of that fact, it is imperative that we all use the gifts and talents given us to respond to the needs of our profession and the people we serve.

I know of no other profession other than medicine where the responsible use of these gifts and talents is more important. How we care for our patients, respond to the needs of our community and our state, and serve our profession will determine whether we have used them well.

Medicine is a learned and respected profession and has been known as such for generations. Today, as never before, it is important that we accept that position willingly. We must remember, however, as the TV ad goes, "We got there the old fashioned way; we earned it."

How did our forefathers earn it? They earned it by paying attention to the needs of their patients and communities. Most often, prior to modern technology, that meant just caring.

There will be many issues for the SCMA and each of us to deal with in the coming year and on into the future — ethics (personal and biological), AIDS, toxic waste, health education, tort reform, care for the indigent, care for the aging, and also maternal and newborn — to mention just a few.

I pledge to you that the SCMA will continue to respond, to the best of its abilities, to every issue that comes its way in a thoughtful and caring way.

In return for that pledge, I ask of you the means to make that pledge good — your support and participation; without them we can do nothing. You are the key!

I look forward to serving you and the people of South Carolina. Here's to a great year!

CRDuncan Jr. MD

— Charles R. Duncan, Jr., M.D.
President

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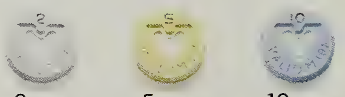

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President's Page

COMPREHENSIVE HEALTH EDUCATION AND OUR RESPONSE TO IT

At the last Annual Meeting of the South Carolina Medical Association, your House of Delegates passed several resolutions that state clearly our stand on health education. Resolutions C-15 from the Second Medical District and C-17 from the Spartanburg County Medical Society addressed the issues of comprehensive health education and teenage pregnancy. They are inseparable and are reproduced here for you to review.

> *Resolution C-15*
>
> *"RESOLVED, That the South Carolina Medical Association support the establishment of comprehensive school health education in South Carolina's schools, beginning in kindergarten and continuing through the twelfth grade, for the purpose of maintaining, reinforcing, or enhancing the health related skills, attitudes, and practices of children and youth that promote wellness, health maintenance, and disease prevention. Such comprehensive health education must include the following subjects: growth and development; nutrition, safety and accident prevention; dental health; community health; consumer health; prevention of sexually transmitted disease; substance use and abuse; mental and emotional health; and parenthood."*
>
> *Resolution C-17*
>
> *"RESOLVED, That the SCMA support at the highest level a program promoting abstinence as the appropriate sexual behavior in this population; and be it further RESOLVED, That the SCMA support at the highest level a program like the Three R or other comprehensive locally approved program to be immediately implemented in our schools to teach the responsibility for prevention of pregnancy and sexually transmitted diseases among teenagers who will not practice abstinence; and be it further RESOLVED, That the SCMA encourage its member physicians to assist in the local implementation of the program; and be it further RESOLVED, That the SCMA and component societies and member physicians offer services as resource groups or persons for the presentation and teaching of this program."*

As physicians, we have a responsibility to the public and its welfare, specifically in matters that relate to health. The House of Delegates exercised that responsibility by passing the above resolutions.

Our response must be one of total commitment to endorsement and support of current legislation which proposes comprehensive health education, Senate Bill 546. The people of this state and the General Assembly are looking to us to provide leadership in health matters. The next session of the General Assembly will be crucial to us all and we must be prepared on both the local and state level to respond with strength and conviction.

The comprehensive nature of the legislation which is outlined in Resolution C-15 is essential. Unfortunately, most opponents want to focus on the sex education issue. The tragedy is that if a system were already in place, the concerns of most people would have been laid to rest. Sex education is a concern which must be addressed with sensitivity. Again, it cannot be separated from the whole, especially when faced with the specters of AIDS and teenage pregnancy.

In recent months I have taken part in hearings on health education and task force meetings on AIDS. It is evident that there is much education to be done. It is obvious that it will be difficult to reeducate an adult population with many fixed minds, which makes it even more important that our young people are exposed to good information in a proper setting.

I urge each of you to study the issues, review the resolutions and proposed legislation. Discuss each of them with your spouses and colleagues and friends. Educate your legislators.

The South Carolina Medical Association is an outspoken supporter of Comprehensive Health Education and each one of its members must be prepared to respond.

— Charles R. Duncan, Jr., M.D., *President*

P.S. I recommend to you the June issue of *The Journal of the South Carolina Medical Association* which is devoted to the AIDS Conference held at our last Annual Meeting. It has valuable information for helping address the issues of this very important disease.

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President's Page

ORGANIZED MEDICINE, THE FEDERATION

As an insert in last month's *Journal of the South Carolina Medical Association*, there was a report of the SCMA delegation to the Annual Meeting of the AMA. John Hawk, M.D., Charleston, chairman of the delegation, is to be commended for his fine job of reporting to you some of the key issues which were addressed. That was no easy task, considering the full agenda with which the House of Delegates of the AMA had to contend.

I urge you to read this report carefully if you have not already done so. His conclusion makes three statements which I strongly support and feel need to be repeated here:

1. If you are not already a member of the AMA, please join now.
2. Take advantage of the opportunities which the AMA provides.
3. Communicate with the delegation through county societies, participation in the SCMA, and especially communicate directly with individual members of the delegation.

The federation of organized medicine (county medical societies, SCMA and AMA) is working hard on your behalf and on behalf of the people we serve. The federation deserves your full support, starting with membership at all levels, county, state and national. It enables us to present a unified voice in the support of quality health care for all people and in support of the concerns of its physician members.

Examples of how the federation meshes or works to benefit all its component societies can be easily demonstrated.

The SCMA has been asked to state its position on AIDS and on ethics of physicians dispensing drugs. Your ethics committee will meet on July 22 and will have a good starting point in developing responsible policy statements because of the recent actions of the AMA House of Delegates. Report YY of the AMA Board of Trustees deals with many AIDS issues and by resolution, the House affirmed the physician's right to dispense drugs and devices when in the best interest of the patient.

The SCMA and the AMA may not always agree on every issue, but dialogue is there, policies are set, goals established and action taken.

Joint efforts of the AMA and state medical societies have been successful in areas of legislation, DRG modification, and forcing "due process" in the PRO sanctioning process.

There are many more examples, but space prohibits going further. Again, each member of your delegation invites you to communicate with him or her.

We as physicians are fortunate to have been given the gifts and opportunities to use these gifts. It is essential to the nature of our profession that we act responsibly. That includes not only providing quality health care, but in belonging to and supporting the federation of organized medicine on the county, state and national levels.

CRDuncan Jr. MD

— Charles R. Duncan Jr., M.D.
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President's Page

OPPORTUNITIES THROUGH SCIMER

An opportunity exists for us to make a real impact on our communities and on public awareness on behalf of the SCMA. Through support of South Carolina Institute for Medical Education and Research (SCIMER) and its activities, many of the people in this state will know the SCMA is interested in them.

The SCIMER Board is setting its agenda and is looking at broadening its horizons. A few of their interests will be discussed here just briefly.

SCIMER, in concert with the South Carolina Medical Association Auxiliary, has for some time been active in supporting the education of medical students through its scholarship program for tuition grants. In addition, the SCIMER Board is now looking at setting up a special scholarship award program which will go even further.

I am pleased to see that medical ethics has been an interest of SCIMER. The SCIMER Board plans to work with the Medical Ethics Committee to select the next Leonard Douglas Memorial Lecture speaker. The Board also is considering establishing an award to be given to a medical student for the best essay on a subject in the area of medical ethics. I feel both of these moves certainly are helping to address issues with which we will be dealing more heavily in the near future.

A joint project with the SCMA Auxiliary has the potential to benefit the public and the SCMA like few things we have ever done. Recently the medical auxiliary came to the Board of Trustees with plans for a health van that would travel the state to serve the school systems, health fairs, etc. SCIMER was the logical group to coordinate the project and will be working with the auxiliary in planning and securing funding. This is an ambitious and exciting project. I commend it to you and urge your support of it.

As you can see, SCIMER has made commitments that need our support. We have a responsibility — an obligation — to return to our communities and our state some of the blessings we have received.

SCIMER can be supported by memorial donations which are always acknowledged, and you will also have an opportunity to support SCIMER with your next dues statement. Contributions are always accepted, however, at any time.

I ask you to be aware of the activities of SCIMER, take an interest in what SCIMER is doing and support SCIMER financially.

Your SCMA has been very active on your benefit in addressing the many issues which we have had to face, legislatively and otherwise. Many of you have supported the efforts of your organization in many ways, such as serving on committees. We have done little, however, to reach outside of ourselves. SCIMER is affording us an opportunity to do so. I urge you to support the activities of this very fine organization working diligently on behalf of the citizens of South Carolina.

CRDuncan Jr. MD

— Charles R. Duncan Jr., M.D.
President

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President's Page

ETHICS AND PROFESSIONALISM

Hippocrates: "To clear the past, diagnose the present, foretell the future; practice these acts. As to diseases, make habit of two things — to help, or at least to do no harm." Maimonides' prayer (circa, 1190): "Do not allow thirst for profit, ambition for renown and admiration, to interfere with my profession for these are the enemies of truth and can lead me astray in the great task of attending to the welfare of your creatures." Greg Easterbrook (*Newsweek*, January, 1987): "The medical mind is a complex arena. Within it an ethic of service is at war with the craving for gain. Most occupations make no pretense of an obligation to human kindness. But physicians must vow to place others above themselves, and it is a vow most doctors struggle to honor. Those who lose the conflict between their better and lesser natures may descend into self-pity."

Take a moment to reflect on the above quotations that span the ages, from the earliest time of recorded history, to the present.

Medicine, as a "Learned Profession," has always been called to be above the forces that, in general, rule society. Physicians have, in the past, set higher standards of conduct for themselves than the minimal rules of ethics that govern the marketplace; they have claimed to be above the market and pure commercialism.

Alan Nelson, M.D., Chairman of the Board of Trustees of the AMA, in his address to the National Leadership Conference, February, 1987, asked the questions: "How, then, do we rationalize what we see occurring as the trends toward corporatization and consideration of medicine as an economic good threaten to infringe upon the traditional ethics that regard medical care as a social good?

How do we incorporate the beneficial aspects of medicine as an economic good, such as the positive effects of competition and the freedom from external regulation with the human commitment to our fellow man that is the essence of medicine as a social good?

How do we preserve our professionalism and what is the role of medicine?"

These are questions which we as individual physicians and the SCMA and organized medicine as a whole must address.

No longer are we free to control all the forces that impact upon us, such as third party payors, business coalitions, consumer groups, and state and federal agencies acting on behalf of the public through our elected officials.

While we cannot control, we can be a strong voice in shaping the future of medicine. Our ethical tradition of strong commitment to the availability and quality of health care for all peoples must continue to be a loud voice, heard by all.

For that voice to be heard, though, we must be responsible stewards of the talents given us. We must first look at ourselves and demand of ourselves, individually and collectively, that we deserve the trust given us by our patients.

The SCMA has taken a strong step. A Medical Ethics Committee has been appointed and is already hard at work. This committee is charged with the formidable task of presenting to the Board of Trustees, for approval, statements of policy directed to the issues of concern to us all.

I encourage all of us as individuals, county medical societies, and specialty societies, to reflect on our mission. Ask the pointed questions. Who are we? What is our responsibility to the profession, to the public trust given us? Are we true servants? What is the center of our ethics? Where will we take our stand for maintaining quality health care for all?

The Ethics Committee can only help us answer these questions by giving us guidelines. The final answer lies within each of us. The future of the PROFESSION of medicine is directly related to how we answer these questions.

CBDuncan Jr. MD

CHARLES B. DUNCAN, JR., M.D.
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President's Page

PHYSICIANS AS LEGISLATIVE CARETAKERS

Come January, the General Assembly of the state of South Carolina will reconvene. Many of the issues our senators and representatives consider will have an impact on our profession and the people we serve.

Tort reform, comprehensive health education, licensure tied to mandated assignment for Medicare, physician drug dispensing, surrogate motherhood, and AIDS-related legislation are but a few of the bills we will be called to face. The diversity of these legislative issues alone will dictate that the SCMA and its member physicians make a committed legislative effort.

The SCMA, through its Legislative Activities Committee, its staff and Board of Trustees, studies every piece of legislation introduced and determines if a position needs to be taken. Priorities are assigned, position statements outlined and actions taken. SOCPAC, our political action committee, evaluates candidates for office and makes the decision on which candidates to support.

With few exceptions, measured by the outcome of candidates and bills supported or opposed, our success in the past has been outstanding. We can be thankful for the dedicated few who have been diligent on our behalf.

I feel the future will be much more difficult. The issues are becoming more complex. The cost of health care, for example, is a concern to us and to all of society and the quality of health care delivered is being affected by many decisions being made in the guise of cost containment. Also, the ramifications of the AIDS epidemic are mind boggling. Two bills have been introduced and I am sure more are to come.

Major elections are just around the corner and present us many choices.

It is more and more important that each of us accept our "fair share" of the responsibility our profession must assume as caretakers and advocates for public health issues in the legislative arena. That responsibility includes knowing how candidates and elected officials stand on health matters.

Not too long ago, one of our key legislators reminded some of us that we, organized medicine, should be the strongest advocate for the people in this country. I know he is right. We have not realized the power of the medical profession to influence. Each doctor has a voluntary constituency in the patients he or she treats. When all these patients are grouped with other doctors' patients, this category includes almost all of the electorate of the state! We have an obligation to inform, and to educate our patients. We cannot assume they understand the issues we and they face together.

Every legislator has a personal physician or physicians. There is no reason they should not be aware of our position on legislative issues and the impact a bill might have, be it positive or negative.

Polls have shown the people want doctors to be their advocate. Unfortunately the public does not perceive us to be. That is so in spite of the countless hours spent on many issues on behalf of the people we serve.

Until the people of this state and this country know we care about them and place their needs first, we will never realize our full potential as their "representatives." That "built-in" constituency each of us has as our patient population will respond to us only if we have been good caretakers of the trust they have given us.

CRDuncan Jr. MD

— Charles R. Duncan, Jr., M.D.
President

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We request that manuscripts be concise (no longer than 8 typewritten pages, double-spaced), with no more than ten references. These should be cited in the text in superscript, e.g., "Bottsford, et al.[3]", and should conform to the following style: "3. Bottsford JE, Bearden RC, Bottsford JG: A ten year community hospital experience with abdominal aorta aneurysms. *J S C Med Assoc* 79: 57-62, 1983." Ordinarily, publication of four small illustrations or tables or the equivalent will be paid for by *The Journal*. Manuscripts should be submitted in duplicate. Reprints will be made available by the publisher.

President's Page

EDUCATION—CONTINUING OPPORTUNITY—RESPONSIBILITY

This month's Journal celebrates the tenth anniversary of the University of South Carolina School of Medicine. I congratulate and commend the University on this early milestone which I know is just the first of many.

The occasion of this celebration calls for some remarks concerning education.

Recently, I had the pleasure of being the speaker at the Fall Convocation at the Bowman Gray School of Medicine, my alma mater. This convocation was somewhat unique in that it honored the sophomore class, the class of 1990, as it entered its clinical instruction, the passage from basic science and classroom instruction to the clinical years.

These students are moving from an isolated classroom setting to becoming part of the larger world, the community. They were challenged to enter it as a servant to humanity and were called to extend their education beyond the classroom and scope of disease.

Students are not the only ones who should realize the continuing opportunity and responsibility of education. We should not only be concerned with education to maintain competence in treating disease, but to broaden our ability to deal with the ethical and philosophical issues and to respond to the communities we serve.

Medical centers like the USC School of Medicine, whose anniversary we celebrate; MUSC, whose long history since its inception in 1824 as the Medical College of South Carolina; and the other centers each of us attended, provided for us many opportunities for learning. They were and are true teaching centers with a goal, a commitment to producing good practitioners of medicine.

The centers also provide challenges to their faculty to maintain a high level of competence. Interplay with each other and students stimulates that challenge and helps maintain that level.

Those of us in practice outside the academic setting have that same responsibility and opportunity, though somewhat different, and of maintaining that same level of competence. Every patient we see is a challenge, a teaching tool. Every time we talk with each other, have local scientific meetings, department meetings, attend CME courses, we continue our education. We are challenged by our moral and ethical tradition to maintain competence. Our patients expect that and deserve that.

We also must realize we cannot be experts in everything in our field. Competence can be measured by what we know, but more important in many ways is knowing what we don't know, can't do, and having the strength to acknowledge that. We must be true to ourselves and our patients.

Again, congratulations, USC School of Medicine on your tenth anniversary. Congratulations also to all centers of learning, be they university settings or the office of the rural family physician. May they all continue the proud tradition of this most learned profession and provide the best medical care in the world.

CRDuncan Jr. MD

—Charles R. Duncan, Jr., M.D.
President

THE JOURNAL
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A REVIEW OF CANCER OF THE STOMACH*

KENNETH H. MINCEY, M.D.
PAUL H. O'BRIEN, M.D.**
HENRY C. WEST, M.D.

This report involves patients treated at the Medical University of South Carolina Hospital and Charleston Memorial Hospital for malignancies of the stomach from 1970 through 1982. One hundred fifty-two patients were evaluated with a minimum follow-up of three years. The total group was evaluated for a number of factors while only 123 patients underwent operation. Twenty-nine patients either refused operation or were not felt to be surgical candidates. Race and sex were reviewed as well as age. Preoperative signs and symptoms, preoperative tests utilized, and blood types were reviewed. Indications for operation and the specific operative procedures were evaluated. Postoperative complications in general and according to individual operations were reviewed. Operative mortality was defined as death within 30 days of operation or death prior to discharge from the hospital. Tumor histology was broken down as well as stage of disease. Survival for all patients including those not operated upon is tabulated. Survival according to histology and stage were also examined.

RESULTS

The population of patients in the hospitals used for this study is approximately 50 percent white and 50 percent non-white. Black patients predominated in this series with 122 being black and only 30 white. The male to female ratio was 92 male and 60 female. The age range was 15 years-90 years with a mean age of 62 years.

Preoperative signs and symptoms showed pain and weight loss to be the most common in 63 percent and 60 percent of patients respectively (Table 1). Other less common findings including anorexia, nausea, melena, gross bleeding, malaise, and dysphagia were all recorded. Preoperative testing varied considerably but consisted primarily of upper GI series and upper endoscopy. Less commonly performed tests were barium enema, brain scans, CT scans, and gastric washings for cytology.

Only 106 patients had blood type determina-

TABLE 1

PREOPERATIVE SIGNS AND SYMPTOMS

Pain	94 patients (63%)
Weight loss	90 patients (60%)
Anorexia	43 patients (29%)
Nausea	39 patients (26%)
Melena	34 patients (23%)
Bleeding	21 patients (14%)
Malaise	17 patients (11%)
Dysphagia	15 patients (10%)

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TABLE 2

BLOOD TYPE

	O	A	B	AB	TOTAL
Black	41(48%)	26(31%)	17(20%)	1(1%)	85(100%)
White	9(43%)	8(38%)	3(14%)	1(5%)	21(100%)
TOTAL	50(47%)	34(32%)	20(19%)	2(2%)	106(100%)

tion (Table 2). For these patients there was no significant difference between races. Blood type O was most common in both races, 48 percent in black patients and 43 percent in white patients. Blood type A followed in frequency at 31 percent and 38 percent respectively. Others with blood type B and AB are listed in Table 2.

The indications for operation were determined (Table 3). A biopsy proven diagnosis was most common in 73 patients (59 percent). Findings on upper G-I series consistent with malignancy were used in 31 patients (25 percent). Thirteen other patients had more urgent indications consisting of obstruction in nine patients, perforation in five, and active bleeding in two patients.

A large number of operations were used and are shown in Table 4. Most common was distal gastrectomy with gastrojejunostomy in 46 patients (37 percent). Celiotomy with biopsies only was performed in 32 patients (26 percent). Palliative bypass in the form of gastrojejunostomy without resection was used in 15 patients. Five patients had variants of these procedures with resections of large or small bowel.

TABLE 3

INDICATIONS FOR OPERATION

Biopsy proven diagnosis	73 patients (59%)
Findings on UGI series	31 patients (25%)
Obstruction	9 patients (7%)
Perforation	5 patients (4%)
Bleeding	2 patients (2%)
TOTAL	123 patients

29 Patients received no operation

TABLE 4

OPERATIVE PROCEDURES

Celiotomy with biopsies	32 patients (26%)
Distal gastrectomy, gastro-jejunostomy	46 patients (37%)
Palliative bypass without resection	15 patients (12%)
Proximal subtotal gastrectomy	12 patients (10%)
Distal gastrectomy, gastro-duodenostomy	8 patients (7%)
Total gastrectomy	4 patients (3%)
Other	6 patients (5%)
TOTAL	123 patients (100%)

There were a total of 43 postoperative complications in 123 operations for a 35 percent morbidity (Table 5). By far the most common was a pneumonia occurring in 15 patients (35 percent). Wound infection occurred in four patients, respiratory failure and urinary tract infection in three patients each. Empyema and stomal obstruction occurred in two patients each. Both empyemas were inpatients undergoing total gastrectomy who had thoraco-abdominal incisions. Table 6 illustrates the number of complications according to operative procedure.

The histologic pattern was verified in a total of 143 patients (Table 7). In the 20 patients not undergoing celiotomy the diagnosis was made by means of endoscopic biopsy or lymph node biopsy. Adenocarcinoma was found in 129 patients and this was predominately poorly differentiated. Eight patients (six percent) had well differentiated tumors, 26 patients (20 percent) moderately well differentiated, and 95 patients (74 percent) had poorly differentiated tumors. Fourteen patients had tumors other than adenocarcinoma (Table 7).

The lymph node status of 136 patients was determined, 13 of these by peripheral lymph node biopsy. Eighty-seven percent were found to have metastases to the lymph nodes (Table 8). Utilizing the TNM classification, patients were grouped according to stage of disease. Only four patients (three percent) had stage 1 disease, while 96 patients or 71 percent had stage 4 disease.

Overall survival was determined for 125 patients with 27 being lost to follow-up (Table 9). Overall, 84 patients (67 percent) were dead less than one year after diagnosis and only 15 (12 percent) survived greater than five years. Table 10 shows survival according to operative procedure and as well those who did not receive operation. Proximal gastrectomies versus distal gastrectomies showed very little difference with a 27 percent and 20 percent five-year survival respectively. Interestingly, patients undergoing no operation seemed to have better survival than those with only celiotomy or palliative bypass. Seventy-eight percent of those who were not operated on lived less than one year while all patients undergoing palliative bypass died within one year.

Survival according to histology is shown in Table 11. Overall a 28 percent five-year survival with well differentiated tumors, 18 percent five-year survival with moderately well differentiated tumors, and six percent five-year survival for poorly differentiated tumors was found. One patient with reticulum cell sarcoma lived less than one year while two lived greater than five years. Only one patient of six with lymphoma lived five years.

Survival in patients with positive lymph nodes revealed a nine percent five-year survival in contrast to a 40 percent five-year survival in patients without metastases to the lymph nodes (Table 12).

TABLE 5

POST-OPERATIVE COMPLICATIONS

Pneumonia	15 patients (35%)
Wound Infection	4 patients (9%)
Respiratory Failure	3 patients (7%)
Urinary Tract Infection	3 patients (7%)
Empyema	2 patients (5%)
Stomal obstruction	2 patients (5%)
Renal Failure	1 patient (2%)
* Others	13 patients (30%)
TOTAL	43/123 ->->->35% morbidity

*Bleeding, Pulmonary Embolus, Fistuli, Anastamosis leak

TABLE 6

POST-OPERATIVE COMPLICATIONS

OPERATION	COMPLICATIONS(#) % OF TOTAL COMPLICATIONS	%COMPLICATION/ PROCEDURES
Celiotomy	12 (28%)	12/21 (37%)
Distal gastrectomy, gastro-jejunostomy	12 (28%)	12/46 (26%)
Proximal subtotal gastrectomy	5 (12%)	5/12 (42%)
Palliative bypass	6 (14%)	6/15 (40%)
Distal gastrectomy, gastro-duodenostomy	4 (10%)	4/8 (50%)
Total gastrectomy	2 (5%)	2/4 (50%)
Other	2 (5%)	2/6 (33%)
TOTAL	43 100%	

TABLE 7

HISTOLOGY

Adenocarcinoma -	Well differentiated	8 patients (6%)
	Moderately differentiated	26 patients (20%)
	Poorly differentiated	95 patients (74%)
	TOTAL	129 patients
Leiomyosarcoma		2 patients
Reticulum cell sarcoma		3 patients
Lymphoma		5 patients
Lympho-sarcoma		1 patient
Unknown		3
	TOTAL	14 patients

TABLE 8

LYMPH NODE STATUS

RACE	POSITIVE	NEGATIVE	TOTAL
WHITE	24	4	28
BLACK	94	14	108
TOTAL	118 (87%)	18 (13%)	136

TABLE 9

STAGE OF DISEASE

RACE	STAGE 1	STAGE 2	STAGE 3	STAGE 4
WHITE	1 (4%)	3 (10%)	6 (21%)	18 (64%)
BLACK	3 (3%)	9 (8%)	18 (17%)	78 (72%)
TOTAL	4 (3%)	12 (9%)	24 (18%)	96 (71%)

TABLE 10

SURVIVAL BY PROCEDURE

OPERATION YRS	< 1 YR.	1-2 YRS.	2-5 YRS.	> 5
Celiotomy (3%)	25 (90%)	1 (3%)	1 (3%)	1
Distal gastrectomy, gastro-jejumostomy 8(20%)	18 (46%)	8 (20%)	5 (13%)	
Palliative bypass	14 (100%)			
Distal gastrectomy, Gastro-duodenostomy	4 (36%)	2 (29%)	1 (14%)	
Proximal subtotal gastrectomy 3(27%)	4 (36%)	2 (18%)	2 (18%)	
Total gastrectomy 2(50%)	2 (50%)			
Other	2 (67%)		1 (33%)	
None	14 (78%)	3 (17%)		1(5%)
TOTAL	83	16	10	15

Survival according to stage revealed a worsening prognosis according to stage with only one five-year survivor with stage 4 disease. Approximately 90 percent of those with stage 4 disease were dead within one year. Although only two patients with stage 1 disease were identified, one lived greater than five years. Four patients (40 percent) with stage 2 disease, and six patients (26 percent) with stage 3 disease lived greater than five years.

COMMENTS

There was a predominance of black patients considering the patient populations involved. Data show that there is an increased incidence of gastric cancer in blacks versus whites.[9] The three to two male to female ratio seen here is similar to that reported in many series.[2, 9, 12]

The majority of patients presented with pain and weight loss. Other series as well found these to be the most frequent presenting signs. Duration of symptoms in those series varied from three to six months.[5, 10]

This group of patients showed a predominance of blood type O followed by blood type A. Other series, primarily dealing with Caucasians, have documented a predominance of blood type A in gastric cancer.[1, 11] This difference could be explained by the predominance of black patients in this series. Other reports dealing with black populations fail to show the predominance of blood type A.[9]

An overall morbidity of 35 percent was found. This is essentially identical to some reports while others report morbidity rates from 10 to 65 percent.[5, 6, 14] Subtotal gastrectomy with gastrojejunostomy had a complication rate of 26 percent. The operative mortality was six percent. Mortality rates vary widely in the literature from four and one-half percent to as high as 26 percent. Most series show a significantly higher mortality with more extensive procedures.[6, 7, 13, 14]

One hundred twenty-nine patients had adenocarcinoma and 74 percent of these had a poorly differentiated histology. Although somewhat controversial, most series observe a predominance of poorly differentiated tumors.[14] Poorly differentiated tumors in this series had a five-year survival of six percent compared to 28 percent in those patients with well differentiated tumors, similar to results of other series.[3, 4]

The presence of metastases to lymph nodes on

TABLE 11

SURVIVAL BY HISTOLOGY

SURVIVAL	WELL-DIFFERENTIATED	MODERATELY WELL DIFFERENTIATED	POORLY DIFFERENTIATED
< 1 YEAR	3 (43%)	9 (41%)	65 (81%)
1-2 YEARS	2 (28%)	4 (18%)	6 (7%)
2-5 YEARS		5 (23%)	4 (5%)
> 5 YEARS	2 (28%)	4 (18%)	5 (6%)
	7 (100%)	22 (100%)	80 (100%)

	LEIOMYOSARCOMA	RETICULUM CELL SARCOMA	LYMPHOMA	LYMPHO-SARCOMA
< 1 YR.		1 (33%)	1 (25%)	1 (100%)
1-2 YRS.	1 (100%)		1 (25%)	
2-5 YRS.			1 (25%)	
> 5 YRS.		2 (67%)	1 (25%)	
	1 (100%)	3 (100%)	4 (100%)	1 (100%)

87 percent of cases is paralleled in other reports.[6, 14] Our patients had a 40 percent five-year survival if lymph nodes were negative and a nine percent five-year survival if positive. Once again, these numbers are similar to others.[13]

Utilizing the TNM classification for stomach cancer as developed by Kennedy, patients in this series were staged and while only three percent had stage 1 disease, 71 percent had stage 4 disease.[8] Two series report the incidence of stage 4 disease at diagnosis to be 33 percent and 55 percent [2, 14] A series from Howard University of predominately black patients paralleled our findings with 73 percent stage 4 disease. That same series reports a mean survival of only two months with stage 4 disease.[9] Others report no five-year survivors with stage 4 disease.[4] In this series there was one five year survivor with stage 4 disease at diagnosis.

SUMMARY

Gastric cancer occurs commonly in our patient population. The 129 cases of adenocarcinoma of the stomach over a 12-year period compared to 240 cases of colorectal cancer in our tumor registry reflects this higher incidence.

The sex predilection of 3:2 male to female is consistent with other reports.

Preoperative signs and symptoms are varied, but in the late stages of the disease as we find, the predominant finding is pain and weight loss.

Although other series have reported a predominance of patients with blood type A for gastric cancer, we do not document that in our series. This is probably related to the predominance of black patients in our group.

Despite the advanced stages, most patients underwent a routine work-up after presentation. Thirteen percent of the patients did however pre-

TABLE 12

SURVIVAL BY NODAL STATUS

SURVIVAL	POSITIVE NODES	NEGATIVE NODES
< 1 YR.	74 (74%)	2 (13%)
1-2 YRS.	10 (10%)	4 (27%)
2-5 YRS.	7 (7%)	3 (20%)
> 5 YRS.	9 (9%)	6 (40%)
	100 (100%)	15 (100%)

TABLE 13

SURVIVAL BY STAGE

SURVIVAL	STAGE 1	STAGE 2	STAGE 3	STAGE 4
< 1 YR.		2 (20%)	7 (39%)	70 (89%)
1-2 YRS.	1 (50%)	1 (10%)	6 (26%)	6 (8%)
2-5 YRS.		3 (30%)	4 (17%)	2 (2%)
> 5 YRS.	1 (50%)	4 (40%)	6 (26%)	1 (1%)
	2 (100%)	10 (100%)	23 (100%)	79 (100%)

sent emergently with obstruction, perforation, or hemorrhage requiring urgent operation. Our operative morbidity was high at 35 percent and seemed to correlate with the extent of disease as patients undergoing resection had a lesser morbidity than those deemed unresectable. Operative mortality was only six percent.

Presentation with far advanced disease was the rule. Of patients with adenocarcinoma, 75 percent had a poorly differentiated histology, and 87 percent had metastases to regional lymph nodes. Overall, 70 percent of patients had stage 4 disease at presentation while only three percent had stage 1 disease.

The overall survival was dismal being only 12 percent at five years. Interestingly, patients receiving no operation had survival times similar to those undergoing palliative bypass or celiotomy. Based on this, patients with stage 4 disease but asymptomatic may best be managed without operation.

The degree of differentiation of tumor as well as lymph node status appears to influence prognosis. Patients with poorly differentiated adenocarcinomas and positive lymph nodes had survival of less than one year in 81 percent and 75 percent of patients respectively. These two findings were grave prognostic indicators. ☐

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THE ELDERLY AND HYPOTHERMIA*

THOMAS E. SHULER, M.D.
SHAWN A. CHILLAG, M.D.**

Hypothermia is arbitrarily defined as a core body temperature below 95.0 F (35 C). It occurs most commonly at the extremes of life, with the majority of cases developing in the elderly. This is mainly because of age-related changes which diminish the older person's ability to conserve or generate heat and intercurrent illness and the required medications.

Much work has been done in Britain on hypothermia with one survey finding that almost ten percent of persons 65 and older were "at risk" for developing hypothermia because of resting core temperature of 95-95.9 F.[1, 2] This means that approximately 2.5 million Americans are at risk. A high index of suspicion is required to make the diagnosis of hypothermia because the presenting symptoms are quite protean. A case of hypothermia in an elderly lady is discussed that came to attention because of confusion. She exhibited several common changes associated with hypothermia that will be detailed.

CASE DISCUSSION

An 85-year-old lady was brought into the emergency department in January. The chief complaint as related by the family was that she had been "talking out of her head" for the last day and a half. Review of systems disclosed "feeling weak," poor appetite and possible weight loss. She had never before been hospitalized. Infectious, cardiac and endocrine symptoms were denied. She had had "arthritis" for many years and had been bedfast for some time. She was not on any prescription medications and did not use alcohol. She lived with one of her children in a well-heated home.

On physical examination her vital signs were a rectal temperature of 92 F (33.4 C), pulse 52/minute, respirations 16/minute and blood pressure of 80mmHg systolic. She was a very cachectic woman in no acute distress who was alert and responsive but oriented only to person. Her skin was very cool to the touch. Pulmonary, cardiac, abdominal and pelvic examinations were unrevealing except for stools that were positive for blood. On neurological evaluation she exhibited a generalized weakness and reflexes were decreased distally.

Laboratory testing revealed a normal arterial blood gas and normal complete blood count and differential. Chemistries revealed normal electrolytes and a glucose of 58 mg/dl. The urine had a trace of glucose. The electrocardiogram showed a slow junctional rhythm and J (Osborne) waves in V4-V6 (Figure).

Passive rewarming was begun using a warming blanket and after 12 hours her rectal temperature rose to 95.4 F. A Swan-Ganz right heart catheterization was performed to aid in fluid management. Marked volume depletion, decreased cardiac output and increased peripheral vascular resistance were present. She improved rapidly with vigorous fluid resuscitation. Broad spectrum antibiotic coverage was utilized because of the possibility of sepsis as a cause of the hypothermia. Within 24 hours the electrocardiogram returned to normal. Cardiac isoenzymes, blood cultures, urine culture, thyroid screening and adrenal studies were normal.

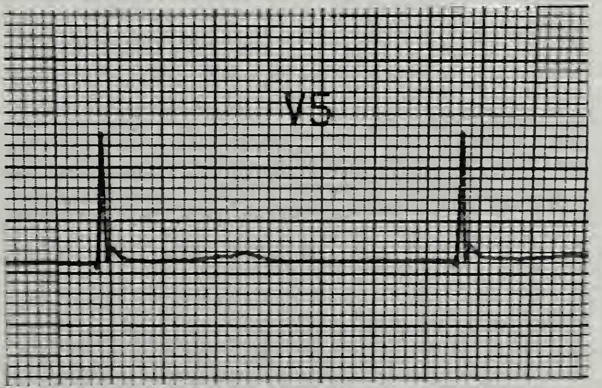

FIGURE. Note the J wave (Osborne wave or camel-hump sign) following the ORS complex.

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Because of the stools that were positive for blood and her cachectic appearance, a gastrointestinal evaluation was undertaken. The barium enema revealed only diverticulae. She aspirated barium during the upper gastrointestinal series. She managed to recover and went home doing quite well.

DISCUSSION

This case highlights the nonspecific manner in which hypothermia may present in the older person. In many cases another significant medical condition will divert the physician's attention away from the diagnosis of hypothermia. The major reasons that the elderly population are so prone to hypothermia are deficient heat conservation and production. In old age, the basal body temperature declines slightly but remains within the normal adult range. The basal metabolic rate falls by 12 percent and calories consumed in activity fall by 25 percent. The thinning of the skin and loss of subcutaneous fat that occurs with aging promotes more rapid heat loss. Shivering as a response to a reduced body temperature is less likely to occur.

In one very interesting study, survivors of hypothermia and elderly controls were studied. The hypothermic victims were found to have a lower basal temperature and less shivering, less vasoconstriction, more heat loss and less heat production when chilled versus age-matched controls.[3] It is as if there were a central neurological lesion. This is very much like the impaired response of the premature infant. Indeed, cerebrovascular disease and stroke are significant risk factors for hypothermia.

Water has a high specific heat. Several factors are present in the older person that decrease total body water. Total body water is reduced by eight percent in older men and women because of a change in the ratio of lean to fat composition.[4] Loss of renal concentrating ability and decreased thirst in the well and ill older person contributes to loss of high specific heat water. The ubiquitious use of diuretics causes much volume depletion. Additionally, other medications such as phenothiazines and sedatives raise the risk of hypothermia.

SPECIFIC PROBLEMS IN HYPOTHERMIA

Volume Depletion: Volume loss is a very prevalent finding when hypothermia is present. As in the case presented, it is due to a "cold diuresis." The peripheral vasoconstriction caused by the cold dislocates fluid centrally causing a central volume overload that induces a diuresis. The hypothermic kidney has an impaired concentrating ability due to decreased renal tubular oxygen uptake. A final factor contributing to the diuresis is decreased ADH release from the pituitary and a diminished renal responsiveness to ADH.

Cardiovascular Changes: Early on and in mild cases there is a rise in heart rate and blood pressure due to catecholamine release and shivering. As the temperature falls beyond 95 F there is a progressive sinus bradycardia that is not influenced by atropine. Slow atrial fibrillation or flutter, premature atrial and ventricular contractions, junctional or idioventricular rhythms may develop. Serious ventricular arrythmias are common as the temperature falls to 80 F (30 C) because of extreme myocardial irritability. Cardiac standstill often occurs at 69 F (20.5 C). A characteristic, although not pathognomonic, J point or Osborne wave may be seen in the lateral precordial leads in about one-third of hypothermic patients.[1, 5]

Other Changes: Hypothermia induces a bronchorrhea and suppresses the cough reflex. Respiratory toilet is very important in these patients and bronchopneumonia is a frequent complication. This predisposition to aspiration may have played a role in the barium aspiration in the case presented. Submucosal gastrointestinal hemorrhage is common and was probably the source of the positive stools in this case.

Because of impaired renal tubular function, glucose reabsorption is hindered and there may be glycosuria even when blood glucoses are normal or reduced.[1, 5] This lady's blood glucose was 58 mg/dl yet she had glycosuria. Additionally, insulin secretion is decreased, and insulin is somewhat ineffective below 85 F. If the blood glucose is less than 400 mg/dl, it may not require treatment. Once rewarming has taken place, any exogenous insulin and endogenous insulin could become active and precipitate hypoglycemia.[5]

Hypothermia is a frequent accompaniment of sepsis in the older patient. This was a consideration in this case. A recent study by Morris et al found that hemodynamic measurements could separate hypothermia associated with sepsis.[6] Patients with sepsis had the usual findings of increased cardiac output and decreased peripheral vascular resistance. Those with hypothermia without sepsis had lower cardiac outputs and higher resistance as in the case discussed.

SUMMARY

A case of hypothermia which came to attention only because of confusion is presented. The salient features are discussed. Hypothermia is quite common as a primary or secondary process even in tepid South Carolina. One of the authors has seen a hypothermic case of an elderly man who fell in his bathroom in June in South Carolina. He had turned on the water in the bathtub on a sweltering June evening and planned to climb in and cool off. The water overflowed on the unconscious man lying on the conductive tile floor cooling him far too much. If the abdominal wall is cool to the touch, suspicion of hypothermia should be high. The elderly have diseases and medications that make them prone to hypothermia. The mortality for isolated hypothermia is 10 percent, but it is 75 percent if another significant medical condition exists. For those over age 75, the mortality rises fivefold.[4, 7] One should suspect hypothermia even when the symptoms are not suggestive and the ambient temperature is not low. □

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DEPRESSION AND SEXUAL DYSFUNCTION COMPLICATING NEUROSARCOIDOSIS*

TERESA A. PIGOTT, M.D.
CHARLES H. KELLNER, M.D.

Sarcoidosis is a multi-system disease of unknown etiology which is most prevalent in the southeastern United States.[1] Since it involves many organ systems, both primary care and specialist physicians often care for patients with sarcoidosis and therefore must be cognizant of its many different presentations and complications.

Sarcoidosis involves the central nervous system in approximately five percent of patients.[2] The characteristic presenting clinical features of neurosarcoidosis involve cranial nerve palsies, electrolyte disturbances or endocrine abnormalities.[3] In addition to the neurological symptoms occurring with sarcoidosis, there are also psychiatric manifestations of the disease.[4] Clinicians involved in the management of sarcoidosis need to be sensitive to such presentations to ensure prompt diagnosis and treatment of these conditions.

A review of the literature reveals several previous reports of neurosarcoidosis with psychiatric presentations which include dementia, delirium, affective disorder and frank psychosis.[3] Hook reported nine cases of neurosarcoidosis with psychiatric manifestations ranging from marked mental changes to a depressive episode.[5] The German literature reports two cases in which the initial presentation of sarcoidosis was psychiatric; one patient presented with symptoms characteristic of Wernicke-Korsakoff psychosis[6] and the other patient presented with a paranoid psychosis.[7] There have been many reports of dementia associated with neurosarcoidosis, but relatively few within the psychiatric literature. Gilmore, Rudden and Kalman[4] reported a case of sudden, violent behavior in an acutely depressed patient with a history of systemic sarcoidosis. Although the patient was found to have CNS sarcoidosis, his major depressive episode was considered unrelated to his sarcoidosis and responded to a combined tricyclic antidepressant and neuroleptic drug regimen. Most recently, Stiller,[8] et al. reported a case of neurosarcoidosis presenting as major depression. Sexual dysfunction has also been reported as a complication of sarcoidosis, either as an isolated problem or in association with affective disorder.[10]

This report describes a case in which both depression and sexual dysfunction occurred in a patient known to have neurosarcoidosis.

CASE HISTORY

Mr. A. was a 34-year-old black male with a twelve-year history of sarcoidosis who was admitted to the Neurology Service with the chief complaint of "coughing up blood, swelling in my legs and headaches." He also complained of persistent impotence and depression of several years duration. He described his sexual dysfunction as involving decreased libido with an inability to maintain an erection. He characterized his depression as a generalized low mood with anhedonia, sleep disturbance (difficulty falling asleep and early morning awakening), increased irritability, and decreased energy. While he reported feeling depressed for several years, he had noted an increase in severity of his mood disturbance and neurovegetative symptoms within the last few months prior to admission. He denied appetite disturbance, hallucinations, suicidal ideation or delusions.

The patient's past medical history was significant for the sarcoidosis with known pulmonary, musculoskeletal and CNS involvement. He had been hospitalized five times for sarcoidosis prior to this admission. He had documented sarcoid granulomas of the cervical cord of C5, C6, and C12 and a pulmonary mycetoma of his left upper lung lobe with hilar and paratracheal adenopathy prior to his admission. His most recent CT brain scan, one year prior to admission, had revealed two small mass lesions in the suprasellar region consistent with neurosarcoid granulomas. He took Prednisone 20 mg po qod for several months prior tained on steroids for two years without any history of steroid-induced affective disturbance or psychosis.

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The patient had been seen in psychiatric consultation two years prior to the present consultation. At that time, the patient was thought to be depressed and given the diagnosis of dysthymic disorder. He was prescribed nortriptyline but discontinued it after several days because of insomnia. He was referred for psychiatric outpatient treatment but did not receive any. He denied any other past psychiatric treatment and did not have a history of alcohol abuse or illicit drug use.

The patient's family psychiatric history was significant for alcohol abuse in the patient's father. The patient had been married fourteen years and had two children. He had an eighth-grade education and had formerly been employed in construction prior to becoming disabled from his sarcoidosis. At the time of his admission, there were no clear-cut recent stressors felt to be contributory to the patient's depression.

On mental status exam, he appeared depressed with sad affect. His thought process was coherent and his thought content unremarkable without evidence of psychotic features. He was alert and oriented ×4 and able to recall 3/3 objects at five minutes. He was unable to abstract, and his general fund of knowledge appeared less than expected for his socioeconomic and educational background.

His admission laboratory data revealed normal electrolytes, including calcium, normal coagulation studies and normal CBC except for hemoglobin of 11.2 with a hematocrit of 33.77. He was noted to have abnormal LFT's with an SGOT of 46, Alkaline phosphatase of 133, LDH of 300 and a normal bilirubin. His ACE level was 21.2 and his ESR (Westergren) was 42 (normal 0-20). An EMG of his left upper and lower extremities was interpreted as normal despite earlier signs of radiculopathy in a previous EMG. A repeat CT scan of his head revealed resolution of previously noted suprasellar granulomatous masses and mild atrophy for his age, but was otherwise normal.

A complete pulmonary evaluation including chest tomograms failed to show evidence of worsening of his pulmonary status and it was recommended that the patient's steroids be decreased as much as possible to avoid risk of supra-infection of the mycetoma. The patient was felt to have recurrent hemoptysis secondary to his pulmonary sarcoidosis. His neurosarcoidosis was felt to be much improved. Clinically, the neurosarcoidosis was not considered to be the etiology of his recent depression. Instead, the patient was felt to be suffering from a primary major depressive episode. His impotence was chronic, and due to the extensive nature of his disease, it was unclear whether psychogenic or organic factors predominated.

He was placed on norpramine for his depressive symptoms (50 mg po q hs with gradual increase to 100-150 mg po q hs) and discharged to home after five days of hospitalization. Psychiatric follow-up at the local mental health center was arranged. He was contacted three weeks after discharge and reported that he had discontinued the norpramine secondary to gastrointestinal distress two days after discharge. However, he did report some improvement in his affect, but continued to complain of some sleep disturbance, low energy, and anhedonia. He was scheduled for his initial psychiatric follow-up appointment the following week. His impotence was unchanged. He was taking 15 mg of Prednisone per day with a schedule of gradual tapering to 10 mg po qod within several weeks and was scheduled for both neurological and pulmonary follow-up within the next several months.

DISCUSSION

This case raises several issues about the etiology of depression and sexual dysfunction in patients with neurosarcoidosis. Had this patient's affective symptoms been assumed to be a direct consequence of his neurosarcoidosis he may well have been treated with an empirical increase in his steroid medication. Instead, a careful neurological reassessment was undertaken which revealed evidence of improvement in the CNS sarcoidosis. Consequently, the patient was suspected of having a concurrent depression and was prescribed an antidepressant. Because of the patient's pulmonary problems with risk of supra-infection, he may well have been spared further complications, largely iatrogenic in origin, through such an approach.

This case illustrates the often complicated interface among neurological, psychiatric, and systemic manifestations of a multi-system disease such as sarcoid. At present, it is difficult to determine the relative contributions of this patient's steroid regimen, and undetectable CNS lesions (particularly hypothalamic), as well as the persistent systemic effects of his chronic illness on the affective disorder.

Steroid therapy is well known to be associated with psychiatric manifestations. However, this patient had been maintained on constant, relatively low dose steroid therapy and had no history of worsening depression or psychosis with several previous steroid dosage manipulations. It is also unlikely that the patient's depression was secondary to adrenal suppression, as he lacked other evidence of Addisonian features, such as hypotension or hyponatremia.

Microscopic CNS sarcoidosis cannot be adequately assessed in this patient, but must certainly be considered. Hypothalamic and pituitary infiltration with subsequent disruption of the synthesis and release of pituitary hormones can result in decreased libido, impotence and sexual dysfunction.[9] This same infiltration may inevitably lead to neuronal effects and neurotransmitter dysregulation with affective dysfunction. This case challenges us to integrate many factors in devising a careful, efficacious diagnostic and therapeutic strategy for evaluating and treating this patient's illness.

SUMMARY

The case of an acutely depressed 34-year-old man with systemic sarcoidosis is presented and discussed with particular emphasis placed upon consideration of the interplay between his chronic disease and possible primary and secondary psychiatric disorders. The case illustrates the need for careful diagnostic evaluation in an attempt to dissect out organic versus psychogenic causes of psychiatric symptoms in patients with neurosarcoidosis. ☐

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OSTEOPATHIC MEDICINE IN SOUTH CAROLINA

JOHN R. GUTHRIE, D.O.*

LICENSURE

South Carolina law, as does the law of the other 49 states, provides for licensure of the Osteopathic physician for the practice of medicine and surgery on the same basis as for the Allopathic (M.D.) physician. According to the State Board of Medical Examiners' Directory: "Osteopathy is hereby defined as a complete school of medicine and surgery utilizing all methods of diagnosis and treatment in health and disease, and placing special emphasis on the interrelationship of the musculo-skeletal system to all other body systems."[1]

Such has not always been the case. The story of Osteopathic Medicine in South Carolina revolves, to a considerable degree, around the practice and pioneering work of Doctors Anna and Ernie Johnson, Summerville, South Carolina General Practitioners. The Johnsons were graduates of the Philadelphia College of Osteopathic Medicine. When they began their practice in Summerville in 1952, they met with initial rebuff in obtaining lab and x-ray work from the local hospital. The lab and x-ray work necessary for their patients was then done under the guise of a friendly, local M.D.'s orders for them, and they began a long commitment to the modification of South Carolina's Medical Practice Act to allow for practice by Osteopathic physicians. Their efforts included extensive lobbying by Dr. Ernie, in particular, who became so tied up in this endeavor that Dr. Anna Johnson found it necessary to return to the practice of medicine in order to compensate for his absences.

He contacted individual legislatures, and at one point, took the President of the Medical University as well as a group of South Carolina Senators and Congressmen to the Philadelphia College of Osteopathic Medicine in order to demonstrate the high quality and ability of the Osteopathic medical schools as represented by the Philadelphia School. The effect of these pioneering efforts was such that for some quarter of a century the South Carolina Medical Practice Act is so defined as to include Osteopathic Medicine.

Generally, the experience of Osteopathic physicians in the Palmetto State at this time is such that acceptance is the rule rather than the exception. Roper Hospital in Charleston is an exception to this generally happy picture for the Osteopathic physician. This is perhaps, an extension of the turf battles that have occurred between Allopathic specialists and Family Practitioners at one place or another around the nation at this point in time.

A Doctor of Osteopathy may prescribe drugs, perform surgery, and selectively utilize all accepted scientic modalities to maintain and restore the health of his patients. In medicine, as in legal practice (where both J.D.'s and LL.B's are fully credentialed lawyers), there are two degrees for the unlimited licensure and practice of medicine, and similarly, in dentistry there are both D.M.D's (Doctors of Medical Dentistry) as well as the D.D.S.'s (Doctor of Dental Surgery), both of whom have equivalent training and practice rights. The term "Osteopathy" is generally considered to be outdated, "Osteopathic physician" being the preferred term.

All D.O.'s, like all M.D.'s, must obtain a state license from their state licensure board for the practice of medicine. Though each state board sets its own particular requirements and then issues the license to the physician, South Carolina is rather typical of the several states. The State Licensure Board of South Carolina is made up of both Osteopathic and Allopathic physicians. All physicians who wish licensure in the state must pass an appropriate examination approved by the State Board. (The new D.O. member of the South Carolina Medical Licensure Board is Orangeburg Radiologist, Dr. Jim Edinger. His predecessor was Dr. Ed Antosek, who served for some years as Charlotte T.V. Channel 3's "Doctor On Call"). Requirements for licensure for both D.O's and M.D.'s are quite similar and provide the same licensure rights, privileges, and obligations in each case. The Osteopathic physician in South Carolina, then, receives a license "to practice medicine and surgery" as do his Allopathic colleagues.

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ACCREDITATION

The accrediting agency for the Colleges of Osteopathic Medicine is the Bureau of Professional Education of the American Osteopathic Association. This entity is recognized for that purpose by the United States Office of Education and the Council for Post-Secondary Accreditation. Some of the Colleges of Osteopathic Medicine are private; some are public. An example of a private school would be the Chicago College of Osteopathic Medicine (from which the author graduated). Some are university affiliated, as with the University of Michigan's College of Osteopathic Medicine. An increasing number of states have built Colleges of Osteopathic Medicine as they realize the health benefits available to the public by this ploy. Many are part of the State Higher Educational System. The West Virginia School of Osteopathic Medicine (where the current author is an Adjunct Faculty Member) provides an example of this affiliation.

OSTEOPATHIC MEDICAL SCHOOLS

The Colleges of Osteopathic Medicine commonly require an undergraduate degree from an accredited college and above average grades and admissions test scores. The medical college admission test is the standard admissions test for Osteopathic (D.O.) as well as Allopathic (M.D.) schools. Acquiring the Doctor of Osteopathy degree requires four academic years of study beyond the baccalaureate level. Required subjects in the basic sciences are standard medical curricula to include anatomy, physiology, biochemistry, pathology, microbiology, and pharmacology. Required clinical subjects include medicine, pediatrics, obstetrics, gynecology, surgery, radiology, and psychiatry. Integrated through the curriculum is special instruction in Osteopathic principles. Then, in addition to a standard medical curriculum, additional instruction in musculoskeletal problems, their diagnosis and treatment is provided. This additional information is a traditional plus in the Osteopathic curriculum.

The Colleges of Osteopathic Medicine and their affiliated teaching hospitals receive federal and state financial assistance. Colleges also receive financial support from private foundations, individual grants and bequests, and through the profession's general fund raising agency — The National Osteopathic Association.[2]

There are 15 Colleges of Osteopathic Medicine at this time. On the eastern seaboard, there is the New England College of Osteopathic Medicine in Maine, the New Jersey State School and New York College, the Philadelphia College of Osteopathic Medicine, the West Virginia School of Osteopathic Medicine (which is a state facility), and the Southeastern College of Osteopathic Medicine in Miami. Other state schools include those in Fort Worth, Texas; Tulsa, Oklahoma; the College of the Pacific in California; Michigan State University's College of Osteopathic Medicine; Ohio University's College of Osteopathic Medicine; the University of Osteopathic Medicine and Health Sciences in Iowa; and the Chicago College of Osteopathic Medicine.

The "flagship" institution of the Osteopathic profession is the Kirksville College of Osteopathic Medicine in Kirksville, Missouri. This college, because of its location, has traditionally maintained a great emphasis on training for rural medical practice, and thus to the point that in Northern Missouri, "D.O." means physician. It was founded in 1892 by Civil War Surgeon A. T. Still. Dr. Still felt contemporary American medicine to be in need of reform. By the time overall reform occurred with the Flexner Report in the early part of the Twentieth century, Osteopathic medicine was well entrenched.

INTERNSHIP, RESIDENCY, AND BEYOND

After graduation, as with their M.D. colleagues, D.O.'s are required to serve a minimum of twelve-month rotating internship with primary emphasis on medicine, obstetrics, gynecology, and surgery. Additional training in specialty fields is available for those physicians who wish it, with residencies in all specialties and sub-specialties of medicine available. The D.O. graduate has access to all medical training programs in the military and public health service, though the D.O. graduate is urged by the American Osteopathic Association to support and utilize the Osteopathic hospitals' training programs in the specialty fields.

Further education beyond medical school, though, is not something that ends with one's residency. It is a life-long process. To help ensure that its members keep abreast of advances in medicine, the American Osteopathic Association requires at least 150 credit hours of approved continuing medical education every three years. Many Osteopathic state societies and specialty organizations have similar mandatory continuing medical education requirements.

OSTEOPATHIC HOSPITALS

Some 200 Osteopathic hospitals located in 31 states provide more than 25,000 beds for the treatment of sick and injured persons. The total number of admissions to Osteopathic hospitals is climbing toward one million patient admissions per year, resulting in some 6.3 million days of hospital care. In addition, the hospital's out-patient departments see some 3.1 million patients each year for emergency and other ambulatory care. The federal government has designated the American Osteopathic Association as the official accrediting agency for Osteopathic hospitals participating in the Medicare and Medicaid programs.

SEPARATE BUT EQUAL

The federal government, state governments, private and public health agencies have recognized Osteopathic medicine as a separate but equal branch of American health care. Osteopathic physicians are eligible to serve as commissioned medical officers in all branches of the United States Armed Forces (The author, for instance, served for a period of time as Commanding Officer of the Naval Reserve Medical Unit in Greenville, S. C.). Osteopathic physicians serve as medical officers in the Civil Service Commission, U. S. Public Health Service and the Veterans Administration, and are medical examiners for the Federal Aviation Agency. In towns, cities and counties they serve as public health officers, coroners, insurance examiners and school-team physicians.

The profession of Osteopathic medicine believes that all patients should have the right to select the kind of health care that they prefer. We also believe that no single group of physicians and no single political organization should hold a monopoly on health care. For these and other reasons, the American Osteopathic Association has rejected attempts by the American Medical Association to merge the two professions. (Some physicians, however, do hold dual membership in the A.M.A. as well as the A.O.A). The A.O.A. contends that the Osteopathic profession's continuing educational emphasis on general practice as opposed to medical specialization best serves the health needs of the American public. Most important, it insists that only the Osteopathic profession has the knowledge, skills and resources to perpetuate the distinctive aspects of medical diagnostic treatment which distinguish Osteopathic health care.

SOMETHING MORE

Osteopathic medicine focuses special attention on the systems through which the musculoskeletal system through the nervous and circulatory systems interacts with all the body organs and systems. There is, then, in addition to ordinary medical schooling for the Osteopathic physicians, special training in musculoskeletal disorders. This dimension, when used in combination with all other accepted diagnostic and therapeutic modalities, allows Osteopathic physicians to provide comprehensive care to the whole person. ☐

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2. Further information on the Colleges of Osteopathic Medicine may be obtained from The American Osteopathic Association, 212 East Ohio Street, Chicago, Illinois 60612.

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Editorial

REAL MEDICINE

From time to time, persons from other states who consider state medical journals to be a dying species ask me why I edit one. My answers range from the laconic to the maudlin, depending on the functional integrity of higher cortical inhibitory pathways. I have always considered one's motives for doing just about anything to be too complex to warrant a single response. However, I usually manage to conceal one motive for editing *The Journal*: an urge to treat the authors of unsolicited manuscripts with the respect they deserve.

Some years ago, and well before he won fame as "Captain Who?" of the Baltimore Colts, Alex Hawkins journeyed from Columbia to the Green Bay Packers' try-out camp. One hot afternoon, he found himself being severely chastised by the legendary Vince Lombardi. "Mr. Lombardi," Hawkins reminded him with his characteristic insouciance: "I want you to know that I did not deliberately come here all the way from South Carolina to try to ruin your football team." Anyone who regularly submits manuscripts to peer-reviewed medical journals must occasionally feel a desire to express similar sentiments.

Over the years, I have continued to send work to national journals, no doubt compelled by one or another insecurity. It is a game for masochists. Typically, one reviewer likes your manuscripts while the other objects to your every use of the semi-colon. Even one's greatest victories are of the Pyrrhic variety, the reviewers having duly extracted their pound of flesh during your successive revisions. Every author's pre-game preparation should include a recitation of Harry Truman's advice to the effect that those who dislike heat should avoid kitchens. As editor of *The Journal*, I have secretly striven to set new standards whereby authors are provided prompt and courteous reviews, always acknowledging that the paper has been read and duly appreciated. But I still play the game. Having a manuscript out at the editor's office piques one's interest in the daily mail.

Let us now begin the story. Recently, I was awaiting judgment on a case report submitted to a periodical which we shall call simply *Prestigious Journal A*. *Prestigious Journal A* is bombarded with unsolicited case reports and rejects about 90 percent of them. I nevertheless considered this one to be a "can't miss." It was the first well-documented case of a certain presentation of a certain uncommon fungal infection, and the presence of a rare congenital immune deficiency presenting in adulthood gave the paper extra pizazz. I let the manuscript marinate for an entire year, then added the final seasonings. I sought immortalization in *Prestigious Journal A* especially for the resident who had seen the patient with me and had done such a nice job, and felt that surely any reasonable reviewer would share my enthusiasm for such a fine admixture of science and art.

The manuscript had been out for review for about six weeks when one morning Dr. Foster Young poked his head in my office and asked: "Wanna go to El Salvador?" "*What?!*" I exclaimed. "Isn't El Salvador full of guerillas and soldiers shooting at each other?!" Foster got to the point: "The Salvation Army needs people to help with the refugees from the earthquake. I've already spoken to your wife, and *she* wants to go." "Just great, Foster," I told him as I suppressed the matter from higher consciousness. "I'll give it some thought."

Shortly thereafter, the mail arrived. I said to my secretary: "I don't really care what's in it, as long as it's not a rejection letter from *Prestigious Journal A*." There lay the envelope, its large size auguring an unfavorable prognosis. Ripping it open, I learned that one reviewer liked the manuscript and said so in a single sentence. The other devoted an entire page to criticisms of the most minute sort, thereby denying the paper a sufficient priority rating for acceptance. I felt crushed. Then came the inner voice.

"*Wait a minute!*" it began. "Here you're upset about a case report dealing with some rare entity which nobody else in the world has even heard of — while people are dying of *common* problems in El Salvador! What's happened to your sense of priorities?! Are you the same person who once told a medical school admissions committee that he wanted to *help people*?!" It didn't take long to tell

Foster that my mind was made up. I was going.

The State Department fact sheet advised that Americans travelling to El Salvador should "exercise extreme caution." Professor Moss Blachman found time to give us a briefing in between sessions of autographing his new book about the stormy politics of Central America. The history of this small country, containing five million people in an area about the size of Delaware, appeared to be a sad saga of successive wars, atrocities and intrigues. Since 1979, the people have known hardships inflicted by extremists of opposite persuasions. Moss reassured us that the Salvadorans are a friendly, industrious people and that we would probably enjoy the trip as long as we avoided empty side streets.

The first day, I struck out on my own for the large urban medical center, Hospital Rosales. Gaining entrance with my Salvation Army identification card, I strode past the throngs of patients and the ubiquitous soldiers with their M16's and into the director's office. I wished to identify their problems, and see what I might do to help.

We had brought with us a small supply of the latest antibiotics, so my first business was to find out what they were using. "Whatever we happen to have," they said. I then learned that the situation with antibiotics was actually favorable — they did not have *any* diuretics or antihypertensives. My Salvadoran counterpart, from whom I was to learn a great deal over the next two weeks, escorted me onto the wards. The typical 30-bed units contained two rows of ancient beds, at the end of which was a single sink. There was no soap. I looked up; a patient with Romañas sign of Chagas' disease smiled pleasantly. My colleague told me that due to shortages, the IV's stayed in "as long as they last" and that much of their equipment was makeshift. There was no blood gas machine. Intensive care facilities were limited, at best. He led me to an isolation room containing a man with rabies, explaining that many of the cases of that disease resulted from shortages of either the vaccine or of the antiserum. I returned to see the man each day, conversing with him privately, reflecting on how we in the States withdraw from potential exposure to far less formidable pathogens.

On the surgery service, things were even worse. The Hospital Rosales is the major surgery referral and teaching center for the entire country. Ten of the 13 operating rooms had been destroyed in an earthquake two years ago, and lack of funds to rebuild them necessitated that all cases be done in the emergency department. The backlog of patients awaiting surgery was incredible. Sometimes, they could not begin cases for lack of an antiseptic scrub solution. Other times, they had to terminate cases and close the patient for lack of a new pair of sterile gloves for the surgeon. In the recovery room, I was told that the monitoring equipment did not work. The head of surgery pointed to a Spanish version of The Lord's Prayer on the wall and explained that this was sometimes the patients' best hope. The ward for postoperative patients appeared to be about 90 percent occupied. "This is unusual," I was told. "Often we have two patients in each bed, and sometimes they sleep on the floor."

Our group was to receive a great deal of media attention, about which we felt vaguely uncomfortable for two reasons. First, many South Carolina physicians have done much more with little or no fanfare (I think of Dr. Hal Crosswell's missions to Haiti, for example). Second, although each member of our group did what he or she could, the real heroes were the Salvadorans. They did not complain or cry or curse the world for their phenomenal streak of bad luck. Instead, they were smiling and cheerful — clearly trying to get on with their lives. The physicians were highly motivated and often extremely innovative. They were accepting uncertainties calmly, making decisions which seemed to me to be extremely cost-effective. They were practicing *real medicine*.

My Salvadoran counterpart explained that the university's library had not been receiving literature since 1980, causing isolation from developments elsewhere. Seeking verification, I headed for the medical school. Although the earthquake had not destroyed the single building, its safety was questionable. The students were holding classes outside in tents which they had built with their own money and proudly referred to as auditoria. They had few books and little or no laboratory equipment. And yet they seemed happy and eager to learn. They sat around in small groups, reading or talking quietly, just as one would expect to see on a warm spring day in Charleston or Columbia.

I learned that the several Salvadoran medical journals had folded, and that this medical library — once the finest in all of Central America — had indeed not received a single issue of a foreign medical journal since 1980. I quickly gave them one, and they seemed very grateful. It was the March, 1986 issue of *The Journal of the South Carolina Medical Association* — the issue devoted to antibiotic usage.

Stumbling out of the library, I felt a bit like Commodore Perry opening a small corner of our planet to the outside world. In that moment, I thought that I finally knew why I enjoy editing a state medical journal. I realized that it was a desire to play a part, however small, in the continuous drama of medical information-making — a process that we take for granted, like so many of the other aspects of our lives. But no — the next time someone asks me why I edit a state medical journal, I won't use that one, either. It sounds too sentimental.

— CSB

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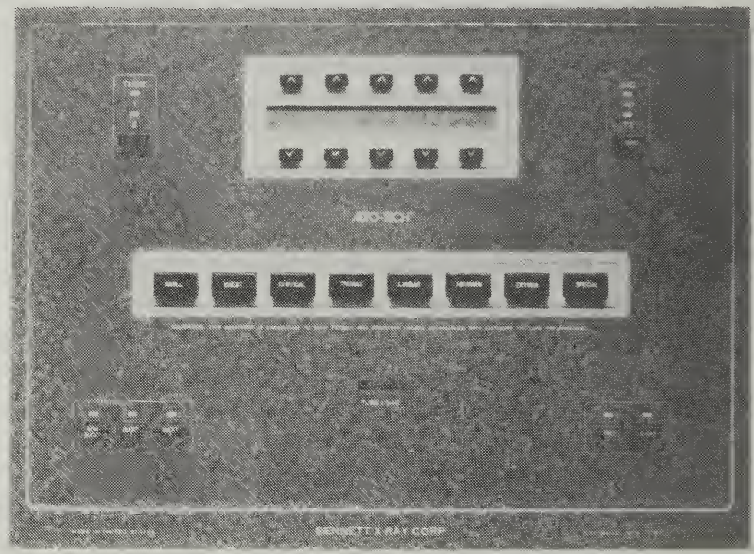

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ON THE COVER: "THE INK OF THE SCHOLAR IS MORE LASTING THAN THE BLOOD OF THE MARTYR"

In the winter of 1848, a group of South Carolina physicians met in Charleston. Dr. D.J.C. Cain, of Charleston, was elected one of the officers of that group of men. This was the organizational convention which led to the formation of the South Carolina Medical Association. An outstanding physician and leader of the South Carolina community, Dr. Cain had a noted history and much of his biography follows in the excellent presentation prepared for this publication by Francis S. Sullivan, M.D.

THE CAIN CUP

In the days of King Arthur the search for the Holy Grail, the cup from which Christ was said to have drunk at the Last Supper, was a quest reserved for those knights who were pure in heart and deed. Since the time of that legend, the awarding of a cup of precious metal for exceptional merit has been a tradition.

The cup which appears on the cover of this issue was given to Daniel J.C. Cain, M.D., in March 1860, in recognition of his worth as a faculty member of the Charleston Preparatory Medical School. His students who were graduating from the Medical College of the State of South Carolina in that year honored him with this gift. In the report of the Dean of the Medical College of that year, one of the resolutions of the graduating class was as follows:

> *RESOLVED, that we extend to the Professors of the Summer School our deep gratitude for the gentlemanly demeanor, and for the kindly interest manifested towards us, which will ever be remembered.*

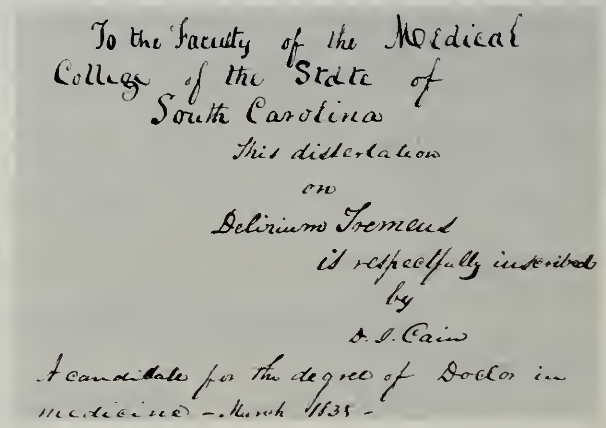
The Faculty took note of the efforts of the preparatory or summer schools as follows:

> *The Faculty cannot but bring to notice the improved opportunities for acquiring medical information, arising in the establishment of Summer Schools, and the recapitulation by the Professors and private instructors.*[1]

The cup which is now held as an heirloom by F. M. Sullivan, M.D., (MUSC 1976), Dr. Cain's great, great grandson, reminds us of a yesterday and of a man who lived a life of example to us. He was a contemporary of Drs. J. Marion Sims and Julian J. Chisolm; and, like them, he searched for the truth. It is to the credit of the Waring Historical Library of the Medical University of South Carolina that his story is preserved.

Daniel Cain was born in the parish of St. John, Berkeley, of Huguenot and Scotch-Irish ancestry. He attended South Carolina College in Columbia and graduated from the Medical College of the State of South Carolina in 1838, at the age of 21. His handwritten thesis entitled "Delirium Tremens" is preserved at the Waring Library. A photograph of the title page is reproduced below. After graduation he trained for four additional years in Paris before returning to Charleston to teach and to practice medicine.

Dr. Cain left evidence of a very busy life. He was a leader in the medical profession from 1840 to 1875 in both practical and academic ways. He was co-editor for five years of the *Charleston Medical Journal and Review*, and contributed an article to each volume of this journal between 1846 and 1860 except 1854. He was on the faculty of the Medical College as a lecturer at the Marine Hospital from 1850 to 1853. Some of his other activities included serving as recording secretary of the organizing convention of the South Carolina Medical Association and making the administrative preparations for that meeting; acting as S. C. Delegate to the AMA Convention in 1849 and as president of the Medical Society of S. C. in 1861. Dr. Cain also served on the Committee on



To the Faculty of the Medical
College of the State of
South Carolina
This dissertation
on
Delirium Tremens
is respectfully inscribed
by
D. J. Cain
A candidate for the degree of Doctor in
medicine - March 1838 -

the Epidemics of South Carolina, Florida, Georgia and Alabama from 1850 to 1854 and wrote the report of that committee.[2] The prose in all of his writings was straight-forward and exact, but graceful.

In 1852, along with Drs. F. T. Miles, J. J. Chisolm, and F. P. Porcher, Dr. Cain founded the Charleston Preparatory Medical School with a term of instruction from April to mid-July. This school was to be complimentary to the Medical College of the State of South Carolina. Instruction was clinical and held at the Alms House and the Marine Hospital and later at Roper Hospital. In 1860, this school had 38 students whose medical education was much enriched by the experience. Dr. Cain was Professor of the Principles and Practice of Medicine.

The Cain Cup remains to honor a seeker of truth in the brotherhood of good physicians. Dr. Cain's writings, available at the Waring Library, as well as the inscription on the cup, remind us of an old Irish proverb: "The ink of the scholar is more lasting than the blood of the martyr." The inscription on the cup is "Dr. D. J. Cain from his class, March 1860."

The gift of the cup was a touching gesture of respect and affection by medical students for a beloved teacher.

The lustre of the cup has lasted over 100 years — reflecting, even now, the great life of a great doctor.

Francis S. Sullivan, M.D.
Greer, South Carolina

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The pictorial history of medicine in South Carolina is indebted to the research and study exemplified by the above paper contributed by Dr. Francis S. Sullivan, Greer, South Carolina. The paper presented expresses the interest that many physicians in our state have in our rich and lengthy history of medicine in the United States. This portion of our journal encourages the participation of other medical historians and seeks contributions of an original nature.

—Thomas M. Leland, M.D., Ph.D.

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PRIORITY FOR PUBLICATION: *The Journal* was founded in 1905 especially as a place for practicing physicians to publish their original observations. This purpose continues to receive priority. Growth of institutions, especially of medical school faculties, during this century may be, at least in part, responsible for a decreased tendency for practicing physicians to attempt scholarly work. Concerned about this trend, *The Journal* encourages practicing physicians to report original observations, including series of cases or individual case reports.

The Journal also welcomes timely review articles by institution-based physicians. However, it is the philosophy of the Editorial Board that state medical journals do not represent an appropriate forum for research findings of a specialized nature. Such findings, it is felt, belong in national or regional specialty or subspecialty journals. Articles by institution-based physicians should serve the information needs of a general physician readership.

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We regret that space considerations limit our ability to publish longer articles, and request that authors adhere to the above guidelines. Similarly, tables and illustrations (see below), should be kept to a minimum, and be specific and pertinent.

THE JOURNAL
OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

VOLUME 83 FEBRUARY 1987 NUMBER 2

ASPIRATION OF METALLIC FOIL BY CHILDREN: REPORT OF TWO CASES*

ALVA L. STRICKLAND, M.D.**
SAMI B. ELHASSANI, M.D.
DERYL G. STOWE, M.D.

Aspiration of foreign bodies remains a frequent cause of respiratory distress and one of the leading causes of morbidity and mortality in children under six years of age.[1] This article has three purposes: (1) to describe two infants who aspirated an uncommon type of foreign body (thin metallic foil); (2) to present the similar clinical picture of both infants initiated by a choking episode followed by alternating signs of partial inspiratory obstruction (croup) and bronchospasm (wheezing); and (3) to underscore the importance of repeated radiological evaluation of the chest and neck in suspected aspiration of flexible shifting foreign bodies to avoid undue delay of removal.

CASE REPORTS

Patient 1: A nine-month-old boy with no previous medical problems was found at home to have an acute onset of coughing and choking followed by a hoarse cry. The episode occurred shortly after dinner while the child was playing on the floor. This prompted the mother to call for Emergency Medical Service and the infant was transferred to the emergency room of the nearest hospital.

Findings on physical examination revealed an alert, active child in moderate respiratory distress with wheezing and tachycardia but without clinical cyanosis. The results of the arterial blood gases in room air were (PaO_2, 77 torr; $PaCO_2$, 38 torr and a PH, 7.36). An anteroposterior and lateral neck and chest roentgenogram were interpreted as normal. Because of the lack of response to subcutaneous administration of 0.2 cc of epinephrine, the child was admitted to the hospital with a tentative diagnosis of laryngotracheobronchitis. He was placed in humidified oxygen and started on therapeutic doses of amoxicillin, dexamethasone, epinephrine and aminophylline. A repeat chest roentgenogram on the fourth hospital day did not show any change from the one taken on admission. Clinical symptoms were noted to alternate between that of croup and bronchospasm with no clinical improvement on conventional medications. The child's vocal cords and trachea were visualized under anesthesia on the fourth day after admission. A silver appearing (2.1 x 1.8 cm) object was seen wedged between the vocal cords and was promptly removed. Microscopic and infrared analysis of the foreign body revealed a thin innermost layer of polyethylene and an outermost layer of aluminum foil, the substance commonly used for packaging tablet type medications, cigarettes and perishable shelf-type foods. Immediate relief of the respiratory distress followed removal of the aluminum foil.

Patient 2: An 11-month-old girl was twice seen in the emergency room on 1/22/84 and 1/24/84

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because of "croupy breathing" following a "choking spell." She was treated with an antibiotic and a bronchodilator for "croup and bronchitis." Because of the worsening symptoms of cough, wheezing and croup, the child was admitted to the hospital on 1/26/84 (four days after the initial symptoms) with a diagnosis of laryngotracheobronchitis.

On admission, respirations were 32/minute, pulse was 140 beats per minute and temperature was 37.7° C. Physical examination revealed sternal and intercostal retractions, croupy sounds and rhonchi. A chest roentgenogram was within normal limits. Over the subsequent four days, there were worsening symptoms of respiratory difficulty alternating between croup without wheezing then wheezing without croup and finally a combination of both, despite aggressive treatment with bronchodilators and antibiotics. Daily chest roentgenograms as well as fluoroscopy were interpreted as normal. On the seventh hospital day, a (1.4 x 1.3 cm) piece of metallic foil was removed from the subglottic area through direct laryngoscopy under a general anesthesia. Edema and associated granulation reaction were noted in the area surrounding the foreign body. The patient was discharged in good condition four days after bronchoscopy.

A retrospective review of all chest and neck roentgenograms revealed the foreign body visible on one anteroposterior view of the neck (Figure 1).

DISCUSSION

While the most common clinical presentation of foreign-body aspiration in infancy is the "diagnostic triad" of choking while eating followed by coughing and wheezing,[2-5] the two infants described in this article presented with an episode of choking followed by alternating symptoms of airway obstruction (croup) and bronchospasm (wheezing). In addition to emphasizing the unusual presentation, the two infants inhaled a foreign body (metallic foil) that has not been previously reported. The characteristic nature of the metallic foil, being thin and flexible, thus moving easily within the subglottic area, may have contributed to the alternating symptoms of croup and wheezing. Such mobility may also explain the difficulty in detecting the foreign body in the frequent chest and neck radiograms which were done in both cases; only the anteroposterior view of the neck in the second infant outlined the foil supporting the statement that the frontal view of the subglottic area is the most informative[6] since thin foreign bodies such as eggshell, or in our two cases (metallic foil), are not visualized on the lateral film. It can be visualized radiologically only in its plane of greatest density (Figure 1).

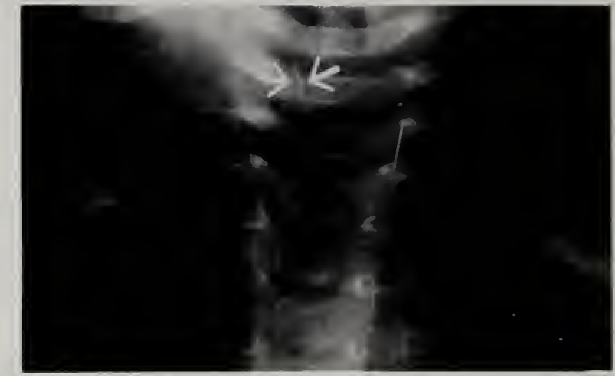

FIGURE 1. Patient 2. Frontal roentgenogram of neck. Note the linear opacity diagonally placed in the subglottic area.

Among objects inhaled by children, organic foreign bodies such as peanuts, hot dog products, watermelon seeds, meat, vegetables and fruits are the most commonly reported.[2, 7, 8] Both organic as well as inorganic objects are, unfortunately, radiolucent. However, a high index of suspicion, coupled with a detailed history of the nature of the foreign body, may lead to an early diagnosis and prompt removal of the object.

The reasons for diagnostic delay of foreign-body aspiration in children include: neglecting the importance of detailing historical facts; confusing the diagnosis with other common conditions such as laryngotracheitis (croup), asthma or epiglottitis; roentgenographic failure in the early detection of both organic as well as inorganic objects; and in aspirations of vegetables or nuts which show delayed manifestations of pneumonia or bronchiestasis. In our two infants, the delay in early diagnosis (four days in patient one and seven days in patient two) of the foreign body was due to the lack of radiological evidence of aspirated objects on chest films. We feel that the mobility of the metallic foil within the trachea may have contributed to that failure. Therefore, in situations where conventional radiographic studies fail to outline a suspected foreign body, additional imaging techniques such as combining magnification and high kilovoltage radiographs (Mag-high KV)[6] and computed tomography[9] may locate an otherwise elusive foreign object in the airway. In a recent article by Gay et al[10], one out of the six reported infants inhaled a thin and flexible foreign body (eggshell fragments) which was the only object demonstrated radiologically on the frontal view of the neck. However, alternating symptoms of croup and bronchospasm were apparently not associated during the hospital stay of the child.

From these observations, it appears that when an infant presents with symptoms alternating between that of croup or bronchospasm, the physician should suspect aspiration of paper-thin flexible objects. A thorough search via radiograms can usually reveal a suspected foreign body within the subglottic area or evidence of its presence by a narrowed airway thereby obviating an unnecessary delay of its removal by endoscopy.

SUMMARY

The two cases reported herein are unique because of the nature and mobility of the inhaled foreign body (metallic foil) which led in turn to delayed diagnosis. We feel that the shifting nature of the object produced both inspiratory and expiratory symptoms confusing the diagnosis with other common age-related conditions that produce acute respiratory distress. ☐

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A NEW ALTERNATIVE IN EVALUATING AND TREATING IMPOTENCE IN MEN: DIRECT INJECTIONS OF THE CORPORA CAVERNOSA*

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Over the past four decades we have seen dramatic changes in the quality and duration of life. People are living longer and couples may remain together for more years than in the past. One of the strong forces maintaining pair-bonding between men and women is sexual activity. With the vast increase in knowledge concerning sexual activity, the public awareness of normal and abnormal sexual activity, and the willingness of men and women to discuss sexual dysfunction, it has become clear that most couples would like to maintain some degree of sexual activity into old age as long as they are physically capable of the activities involved. For the male, sexual dysfunction can be reduced libido, impotence, or failure of orgasm and/or ejaculation. Impotence is the most common complaint. The standard definition of impotence is the inability to get an erection firm enough for vaginal penetration or the inability to maintain the erection for two minutes or longer in at least 75 percent of attempted episodes of intercourse. These definitions are somewhat arbitrary as some men are happy if they succeed 50 percent of the time and other men are upset if they fail five percent of the time. Men who do reasonably well on their own should probably be reassured and periodically reevaluated before more aggressive forms of therapy are instituted. Premature ejaculation is not impotence and the treatment will not be reviewed here.

A comprehensive review of the evaluation for impotence is beyond the scope of the present report; but it has been summarized elsewhere.[1] However, a brief outline of the approach we use can be given. First, the patient should be physically capable of having sex and should have no major contraindications such as incapacitating medical problems. Any man who can get reasonably firm erections some of the time would probably benefit from sex education and sex therapy. Whenever possible, medications which cause impotence should either be discontinued or switched to medicines which appear not to interfere with sexual activity. Hormone abnormalities, including low testosterone or elevated prolactin levels, should be treated. In those men where a definite organic etiology cannot be found and who are not helped by more conservative therapy, a trial of yohimbine can be instituted. The 5 mg tablet is taken once a day for a week, increased to a tablet every 12 hours for one week, and then increased to one tablet three times a day or one tablet four times a day if needed. This medication appears to help between 50 to 75 percent of the impotent men we have treated. Sometimes this treatment works for a few months and then it fails. Very few of the men have any side effects while on this medication. In those men who remained impotent, the next available treatment usually involved the surgical implantation of a penile prosthesis; several different forms are available. However, over the past few years a new and effective form of therapy has become available and is preferred by many men before considering a surgical implant. The new approach involves direct intracorporal injection of medication, usually needed for each attempted intercourse, and limited to one time per week.

Background: The first report of exogenous medication causing an acute erection was reported by R. Virag in 1982.[2] During an operation involving arterial repair, papaverine was injected to dilate the arteries and on the operating table the patient experienced a "fully rigid erection of two hours' duration." After that, trials of papaverine were instituted, and it was found that intracavernosal injections of the drug could cause increased pressure within the corpora cavernosa and that sustained erections were possible. In addition, some of the individuals claimed that their sexual activity increased for some days to weeks after the injection.

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The technique was not popularized until 1983, when G. Brindley, a major speaker at the American Urological Association, dropped his pants and demonstrated to all those people in the audience exactly what an injection of medication could do. Dr. Brindley used the alpha-blocker, phenoxybenzamine. Both phenoxybenzamine and papaverine are vasodilators.

Doctors Zorgniotti and Lefleur reported in 1985 that the combination of papaverine and phentolamine (another alpha-blocker/vasodilator) made vaginal penetration possible in 59 of 62 impotent patients with diverse etiologies (vascular, diabetic, iatrogenic, and Peyronie's disease). Eighteen of these patients self-injected themselves at home, five of them for more than 12 months. The patients were given enough medication to use no more than once a week, and for no more than four episodes.[3] In a followup report in *Medical Tribune*, August 27, 1986, Dr. Zorgniotti noted that he had tried the medication in 324 impotent men and it worked in 77 percent of these men. About one half of these men decided to learn the self-injection technique. He noted that the combination of papaverine and phentolamine worked better than either medication alone in secret trials on six patients.

Current Usage: Intracavernosal injections of medication have become widely used in the past two years. The injections are used for two purposes: (1) as a diagnostic test to determine if a man can get an erection. If a man fails to get an erection even after full dosage of the two medications is given, then it is assumed that either he has corporal incompetence and blood cannot remain trapped in his corpora, or else vascular supply is so limited that he cannot get enough pressure for a sustained erection. Appropriate surgical intervention is needed either to repair the incompetence or for a penile implant. (2) The other use of the injections is for the patients to administer the medications to themselves as long-term therapy for impotence.

There appear to be potential risks for the self-injecting patients. First, there are reports that there may be thickening and fibrosis of the corpora in men who chronically self-inject. This may be due to the mechanics of self-injecting, the medications used, or something else related to the use of these medications. If the fibrosis becomes severe enough, the patient may eventually need an implant. The current feeling is that the men should vary the locations of the corporal injections, that injections should be given no more than once a week, and that the smallest dose of medication which causes reasonable potency should be utilized. Another problem that can occur is priapism. It is important to instruct the patients to seek medical help if an erection lasts four hours or longer. It appears as though erections which last up to six hours can be treated medically by evacuating as much blood as possible from the swollen corpora cavernosa using a syringe and needle. There is then some controversy whether or not the penis should be irrigated with 20 ml (or so) diluted epinephrine or dopamine (0.001 mg/ml) in normal saline. Some individuals have recommended 1 mg metaraminol bitartrate into each corpus, repeated hourly if needed, for three hours to cause detumescence. Conservative medical management using the above can usually cause detumescence.[4, 5] If the erection lasts for a more protracted interval, and the blood in the corpora is clotted, then more aggressive urological therapy is needed and there is a good chance that the patient will need a penile implant. Thus far, there are no reports of any systemic effects of intracavernosal injections of papaverine with or without phentolamine. The medication is apparently slowly released from the penis, is largely diluted by the systemic circulation and probably degraded and/or excreted before enough material is present to cause hypotension.

Laboratory studies of corpora cavernosa in dogs suggest that papaverine has profound effects on dilating the incoming arterial system and also causes increased venous resistance. Phentolamine had little or no effect in dogs.[6] However, the anecdotal report by Zorgniotti noted above suggests that the combined use of papaverine, 30 mg/ml with phentolamine, 0.5 mg per ml, appears to work best.

Local Experience: During the past six months we have been using the combination of papaverine, 30 mg/ml and phentolamine, 0.5 mg/

ml as a diagnostic test and therapeutically to treat men with impotence. We have been reserving the medication for men with suspected neurogenic and vascular impotence. There are some who suggest that the medication has a role in treating psychogenic impotence, as once the patient becomes reassured, spontaneous potency will return. Thus far, we have not used the medication in men in whom we suspect the sole etiology to be psychogenic. We inject half the medication into each corpus cavernosum. The patients are instructed to avoid the veins in the skin. We put the medication into an insulin syringe. We currently begin with 0.2 ml into each corpus. The patients sometimes report transient tingling in the penis. We observe the patient for about 10 minutes and then send the patient home or to a motel for attempted sexual activity with his partner. If the erection is inadequate for vaginal penetration, the patient will be injected one week later using 0.3 ml into each corpus cavernosum. The dose of the medication can be increased at weekly intervals until the maximum of 0.5 ml into each corpus is used. If the patient fails on that dosage, either he has venous incompetence, a fistula from the corpora or profound vascular insufficiency. A cavernosagram can be done looking for a venous leak or a fistula. If vascular insufficiency is present, and the disease is diffuse, most likely the patient will benefit from a penile implant.

If we find a dose of medication which results in a reasonable erection, the patient is given four syringes loaded with that volume of medication. Some authors suggest that the medication be refrigerated. We are telling the patients to keep the medication reasonably cool (below 85°F), but that it need not be refrigerated. We plan studies in the future to examine this more carefully. We tell the patients that if they experience an erection which lasts more than four hours, they need to be treated or else the corporal blood may clot and more serious treatment will be needed. If an erection lasts for more than 30 minutes after orgasm, then the dose of medication is reduced. Some authors suggest that all of the medication can be injected into one side and that the sides may be alternated. We have not been recommending that to date. We have started these injections on 14 men, and only one man failed to respond to dosages up to 0.5 ml for each corpus. Two responders do not want to self-inject themselves. The remaining men are either self-injecting (seven) and total volumes used range between 0.4 and 0.7 ml of the papaverine/phentolamine mixture, or planning to self-inject (four). Thus far, priapism has not occurred; no one has needed treatment for sustained erection. The longest lasting erection was for five hours and it spontaneously subsided. The dosage of medication for that man was halved.

Physiology: The question is how do these injections relate to naturally-occurring erections? The best evidence suggests that under normal circumstances, nerves to the penis somehow trigger the release of an endogenous substance which increases arterial flow to the corpora and also reduces venous outflow. The probable mediator of this is vasoactive intestinal polypeptide (VIP). There are preliminary trials underway where VIP is being injected into the corpora of impotent patients and it appears to result in qualitatively reasonable erections. The present feeling is that the VIP will be available in a few years and it will be less likely to cause fibrosis and thickening of the corpora.

In conclusion, the combination of papaverine and phentolamine appears to have use both as a diagnostic agent and as a therapeutic agent in treating men with organic impotence. It seems reasonable to begin with 40 percent of the maximal dosage, divided equally into each corpus cavernosum. The minimum dose which results in reasonable erections, and does not cause sustained erections should be used. The patients can be taught to self-inject themselves at intervals of once a week or less frequently. The patients should seek medical help if erections last four hours or longer. Experience to date suggests that the blood within the corpora cavernosa will not be clotted at four hours and that the combination of evacuation and irrigation with medication can cause detumescence to occur. Men who fail to experience erections with maximal dose of this medication either have corporal incompetence or severe vascular insufficiency and other forms of treatment will be needed. There have not been any systemic problems recorded after the intracavernosal injections. Ongoing research suggests that another more physiologic agent may be available in the near future. ☐

ACKNOWLEDGEMENTS

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ADDENDUM

After this manuscript was submitted and accepted for publication, a patient was treated for sustained erection as described below:

The patient was a 60-year-old white male who had experienced rapidly progressive impotence beginning about six months before seeking medical help. His medications included ibuprofen, 800 mg four times a day and chronic trimethoprim (160 mg) and sulfamethoxazole (800 mg) daily. Hormone studies were normal. A bulbocavernosus reflex latency time was normal. Resting penile blood pressure was about 80 percent of brachial and after exercise it was unchanged on the left but could not be determined on the right. Alcohol intake had been heavy in the past and the patient was continuing to take 48 to 72 ounces of beer per day and smoking two and one half packages of cigarettes per day. The patient was working full-time. Physical examination was unrevealing. His height was 67 inches and his weight was 185 lbs.

He was given a test dose of 0.2 ml of papaverine/phentolamine into each corpus. This was given as a test dose to see if he could obtain a firm erection. Within 20 minutes of the injection the patient began to experience a reasonably firm erection. He was able to engage in sexual activity twice over the next three hours. Because the erection persisted, he sought medical attention. On arrival in the emergency room, a firm erection was noted with relatively soft glans. Twenty five ml of blood was evacuated which caused a partial detumescence and firmness rapidly returned. About 15 minutes later, another 25 ml of blood was withdrawn from the other corpus cavernosum with partial detumescence which again became firm. The blood was easy to obtain without evidence of clots. One ml of 1:1000 aqueous epinephrine (1 mg) was added to 1,000 cc of intravenous normal saline. Ten ml of this solution was injected into one corpus and then 25 ml of blood was withdrawn. This was repeated every 15 minutes for a total of four installations, over the next hour. At that time the penis remained semi-firm. One further installation and aspiration was performed and the penis was flaccid. The patient went home and on contacting him later in the evening, his penis remained flaccid.

Of the 18 patients we have now treated with direct intracorporal injections, this patient is the only one to have such sensitivity and to develop a persistent erection. While we suspect that ibuprofen may be related to the prolonged erection, we are unable to find evidence to confirm this possible association. After this unfortunate episode, we now instill 0.1 ml of the papaverine/phentolamine mixture into one corpus and if the patient does not obtain an erection after one hour, 0.3 ml is instilled into the other corpus and then the patient is asked to attempt sexual activity with his partner.

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Brief Summary

INDICATIONS AND USAGE: Zovirax Capsules are indicated for the treatment of initial episodes and the management of recurrent episodes of genital herpes in certain patients.

The severity of disease is variable depending upon the immune status of the patient, the frequency and duration of episodes, and the degree of cutaneous or systemic involvement. These factors should determine patient management, which may include symptomatic support and counseling only, or the institution of specific therapy. The physical, emotional and psychosocial difficulties posed by herpes infections as well as the degree of debilitation, particularly in immunocompromised patients, are unique for each patient, and the physician should determine therapeutic alternatives based on his or her understanding of the individual patient's needs. Thus Zovirax Capsules are not appropriate in treating all genital herpes infections. The following guidelines may be useful in weighing the benefit/risk considerations in specific disease categories:

First Episodes (primary and nonprimary infections — commonly known as initial genital herpes):

Double-blind, placebo-controlled studies have demonstrated that orally administered Zovirax significantly reduced the duration of acute infection (detection of virus in lesions by tissue culture) and lesion healing. The duration of pain and new lesion formation was decreased in some patient groups. The promptness of initiation of therapy and/or the patient's prior exposure to Herpes simplex virus may influence the degree of benefit from therapy. Patients with mild disease may derive less benefit than those with more severe episodes. In patients with extremely severe episodes, in which prostration, central nervous system involvement, urinary retention or inability to take oral medication require hospitalization and more aggressive management, therapy may be best initiated with intravenous Zovirax.

Recurrent Episodes:

Double-blind, placebo-controlled studies in patients with frequent recurrences (6 or more episodes per year) have shown that Zovirax Capsules given for 4 to 6 months prevented or reduced the frequency and/or severity of recurrences in greater than 95% of patients. Clinical recurrences were prevented in 40 to 75% of patients. Some patients experienced increased severity of the first episode following cessation of therapy; the severity of subsequent episodes and the effect on the natural history of the disease are still under study.

The safety and efficacy of orally administered acyclovir in the suppression of frequent episodes of genital herpes have been established only for up to 6 months. Chronic suppressive therapy is most appropriate when, in the judgement of the physician, the benefits of such a regimen outweigh known or potential adverse effects. In general, Zovirax Capsules should not be used for the suppression of recurrent disease in mildly affected patients. Unanswered questions concerning the human relevance of *in vitro* mutagenicity studies and reproductive toxicity studies in animals given very high doses of acyclovir for short periods (see Carcinogenesis, Mutagenesis, Impairment of Fertility) should be borne in mind when designing long-term management for individual patients. Discussion of these issues with patients will provide them the opportunity to weigh the potential for toxicity against the severity of their disease. Thus, this regimen should be considered only for appropriate patients and only for six months until the results of ongoing studies allow a more precise evaluation of the benefit/risk assessment of prolonged therapy.

Limited studies have shown that there are certain patients for whom intermittent short-term treatment of recurrent episodes is effective. This approach may be more appropriate than a suppressive regimen in patients with infrequent recurrences.

Immunocompromised patients with recurrent herpes infections can be treated with either intermittent or chronic suppressive therapy. Clinically significant resistance, although rare, is more likely to be seen with prolonged or repeated therapy in severely immunocompromised patients with active lesions.

CONTRAINDICATIONS: Zovirax Capsules are contraindicated for patients who develop hypersensitivity or intolerance to the components of the formulation.

WARNINGS: Zovirax Capsules are intended for oral ingestion only.

PRECAUTIONS: General: Zovirax has caused decreased spermatogenesis at high doses in some animals and mutagenesis in some acute studies at high concentrations of drug (see PRECAUTIONS — Carcinogenesis, Mutagenesis, Impairment of Fertility). The recommended dosage and length of treatment should not be exceeded (see DOSAGE AND ADMINISTRATION).

Exposure of Herpes simplex isolates to acyclovir *in vitro* can lead to the emergence of less sensitive viruses. The possibility of the appearance of less sensitive viruses in man must be borne in mind when treating patients. The relationship between the *in vitro* sensitivity of Herpes simplex virus to acyclovir and clinical response to therapy has yet to be established.

Because of the possibility that less sensitive virus may be selected in patients who are receiving acyclovir, all patients should be advised to take particular care to avoid potential transmission of virus if active lesions are present while they are on therapy. In severely immunocompromised patients, the physician should be aware that prolonged or repeated courses of acyclovir may result in selection of resistant viruses which may not fully respond to continued acyclovir therapy.

Drug Interactions: Co-administration of probenecid with intravenous acyclovir has been shown to increase the mean half-life and the area under the concentration-time curve. Urinary excretion and renal clearance were correspondingly reduced.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Acyclovir was tested in lifetime bioassays in rats and mice at single daily doses of 50, 150 and 450 mg/kg given by gavage. There was no statistically significant difference in the incidence of tumors between treated and control animals, nor did acyclovir shorten the latency of tumors. In 2 *in vitro* cell transformation assays, used to provide preliminary assessment of potential oncogenicity in advance of these more definitive life-time bioassays in rodents, conflicting results were obtained. Acyclovir was positive at the highest dose used in one system and the resulting morphologically transformed cells formed tumors when inoculated into immunosuppressed, syngeneic, weanling mice. Acyclovir was negative in another transformation system considered less sensitive.

In acute studies, there was an increase, not statistically significant, in the incidence of chromosomal damage at maximum tolerated parenteral doses of 100 mg/kg acyclovir in rats but not Chinese hamsters; higher doses of 500 and 1000 mg/kg were clastogenic in Chinese hamsters. In addition, no activity was found after 5 days dosing in a dominant lethal study in mice. In 6 of 11 microbial and mammalian cell assays, no evidence of mutagenicity was observed. At 3 loci in a Chinese hamster ovary cell line, the results were inconclusive. In 2 mammalian cell assays (human lymphocytes and L5178Y mouse lymphoma cells *in vitro*), positive responses for mutagenicity and chromosomal damage occurred, but only at concentrations at least 400 times the acyclovir plasma levels achieved in man.

Acyclovir has not been shown to impair fertility or reproduction in mice (450 mg/kg/day, p.o.) or in rats (25 mg/kg/day, s.c.). At 50 mg/kg/day s.c. in the rat, there was a statistically significant increase in post-implantation loss, but no concomitant decrease in litter size. In female rabbits treated subcutaneously with acyclovir subsequent to mating, there was a statistically significant decrease in implantation efficiency but no concomitant decrease in litter size at a dose of 50 mg/kg/day. No effect upon implantation efficiency was observed when the same dose was administered intravenously. In a rat peri- and postnatal study at 50 mg/kg/day s.c., there was a statistically significant decrease in the group mean numbers of corpora lutea, total implantation sites and live fetuses in the F_1 generation. Although not statistically significant, there was also a dose related decrease in group mean numbers of live fetuses and implantation sites at 12.5 mg/kg/day and 25 mg/kg/day, s.c. The intravenous administration of 100 mg/kg/day, a dose known to cause obstructive nephropathy in rabbits, caused a significant increase in fetal resorptions and a corresponding decrease in litter size. However, at a maximum tolerated intravenous dose of 50 mg/kg/day in rabbits, there were no drug-related reproductive effects.

Intraperitoneal doses of 320 or 80 mg/kg/day acyclovir given to rats for 1 and 6 months, respectively, caused testicular atrophy. Testicular atrophy was persistent through the 4-week postdose recovery phase after 320 mg/kg/day; some evidence of recovery of sperm production was evident 30 days postdose. Intravenous doses of 100 and 200 mg/kg/day acyclovir given to dogs for 31 days caused aspermatogenesis. Testicles were normal in dogs given 50 mg/kg/day, i.v. for one month.

Pregnancy: ***Teratogenic Effects:*** Pregnancy Category C. Acyclovir was not teratogenic in the mouse (450 mg/kg/day, p.o.), rat (50 mg/kg/day, s.c.) or rabbit (50 mg/kg/day, s.c. and i.v.). There are no adequate and well-controlled studies in pregnant women. Acyclovir should not be used during pregnancy unless the potential benefit justifies the potential risk to the fetus. Although acyclovir was not teratogenic in animal studies, the drug's potential for causing chromosome breaks at high concentration should be taken into consideration in making this determination.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when Zovirax is administered to a nursing woman. In nursing mothers, consideration should be given to not using acyclovir treatment or discontinuing breastfeeding.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS — Short-Term Administration: The most frequent adverse reactions reported during clinical trials were nausea and/or vomiting in 8 of 298 patient treatments (2.7%) and headache in 2 of 298 (0.6%). Less frequent adverse reactions, each of which occurred in 1 of 298 patient treatments (0.3%), included diarrhea, dizziness, anorexia, fatigue, edema, skin rash, leg pain, inguinal adenopathy, medication taste and sore throat.

Long-Term Administration: The most frequent adverse reactions reported in studies of daily therapy for 3 to 6 months were headache in 33 of 251 patients (13.1%), diarrhea in 22 of 251 (8.8%), nausea and/or vomiting in 20 of 251 (8.0%), vertigo in 9 of 251 (3.6%), and arthralgia in 9 of 251 (3.6%). Less frequent adverse reactions, each of which occurred in less than 3% of the 251 patients (see number of patients in parentheses), included skin rash (7), insomnia (4), fatigue (7), fever (4), palpitations (1), sore throat (2), superficial thrombophlebitis (1), muscle cramps (2), pars planitis (1), menstrual abnormality (4), acne (3), lymphadenopathy (2), irritability (1), accelerated hair loss (1), and depression (1).

DOSAGE AND ADMINISTRATION: Treatment of initial genital herpes: One 200 mg capsule every 4 hours, while awake, for a total of 5 capsules daily for 10 days (total 50 capsules).

Chronic suppressive therapy for recurrent disease: One 200 mg capsule 3 times daily for up to 6 months. Some patients may require more drug, up to one 200 mg capsule 5 times daily for up to 6 months.

Intermittent Therapy: One 200 mg capsule every 4 hours, while awake, for a total of 5 capsules daily for 5 days (total 25 capsules). Therapy should be initiated at the earliest sign or symptom (prodrome) of recurrence.

Patients With Acute or Chronic Renal Impairment: One 200 mg capsule every 12 hours is recommended for patients with creatinine clearance ≤10 ml/min/1.73/m².

HOW SUPPLIED: Zovirax Capsules (blue, opaque) containing 200 mg acyclovir and printed with "Wellcome ZOVIRAX 200"- Bottles of 100 (NDC-0081-0991-55) and unit dose pack of 100 (NDC-0081-0991-56).

Store at 15°-30°C (59°-86°F) and protect from light.

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*In controlled studies, recurrences were totally prevented for 4 to 6 months in up to 75% of patients.

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TRAUMATIC AORTIC VALVE RUPTURE*

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In 1830 the first reported cases of traumatic aortic valve rupture appeared in the London Medical Gazette.[1] Following this, cases were sporadically reported until 1928 when Howard reviewed the world literature and added his own case.[2] After reviewing the aggregate of 114 cases, he could recommend only symptomatic treatment for this problem. In 1954 the first surgical attack for traumatic aortic valve rupture was made by Hufnagel who inserted a prosthetic valve in the descending aorta.[3] His patient survived and returned to work as a truck driver. The advent of cardiopulmonary bypass in the early 1950s made possible a direct approach to the injured valve. Initially, valvuloplasty was attempted but was uniformly unsuccessful. In 1964 Beall reported the first successful aortic valve replacement for rupture.[4] This was performed on a patient in whom a previous valvuloplasty had been unsuccessful. Prosthetic replacement of the injured aortic valve became the procedure of choice. Recently, valvuloplasty has again been attempted and has been successful.[5] In the future this procedure may supercede valve replacement in selected patients.

CASE REPORT

A 69-year-old man was involved in a motor vehicle accident. He suffered a crush injury of the left chest with a fractured left clavicle, multiple rib fractures, a severe flail, and hemopneumothorax. (Fig.1) There were no other apparent injuries. A CT scan demonstrated a normal thoracic aorta. His blood pressure on admission was 100/40 and with fluid resuscitation rose to 150/40. The hemopneumothorax was treated with a left tube thoracostomy. He rapidly developed respiratory distress and required intubation and ventilatory support. Over the next several days, he developed signs of congestive heart failure associated with elevated liver function studies and rising BUN and creatinine. On the fifth hospital day, a murmur compatible with aortic insufficiency was noticed. He had no prior history of heart murmur. He underwent aortography confirming severe aortic insufficiency. (Fig. 2) He was taken promptly to the operating room.

A median sternotomy was made to expose the heart and aorta. Adhesions from previous coronary bypass surgery were taken down, with care to protect the grafts. The aorta appeared normal on its exterior surface. Cardiopulmonary bypass was instituted utilizing moderate hypothermia. After the onset of ventricular fibrillation, the ascending aorta was clamped and then opened transversely 2 cm. cephalad to the aortic valve. Cold crystalloid potassium cardioplegia was infused into the vein graft orifices as well as the left and right coronary ostia. The non-coronary leaflet of the aortic valve was found to be lacerated in its mid-portion. The laceration was irregular and extended from the free edge of the leaflet to the annulus. Additionally, there was a transverse laceration of the aortic intima with separation of the intima from the media just above the attachment of the non-coronary cusp. This resulted in prolapse of the lacerated leaflet. Because of the irregular nature of the laceration, it was elected to replace the valve rather than repair it. This was accomplished utilizing a 25 mm St. Jude prothesis. The aortic intimal laceration was repaired with pledgeted mattress sutures.

Postoperatively the patient's hemodynamics quickly normalized. His systolic blood pressure remained 150 mm Hg but the diastolic pressure rose to 80 mm Hg. Cardiac output rose to 5 L/min. This resulted in reversal of his renal and hepatic failure. Because of his severe flail chest, he required prolonged ventilatory support. He was ultimately weaned from the ventilator, and three weeks postoperative, he was discharged. (Fig. 3)

DISCUSSION

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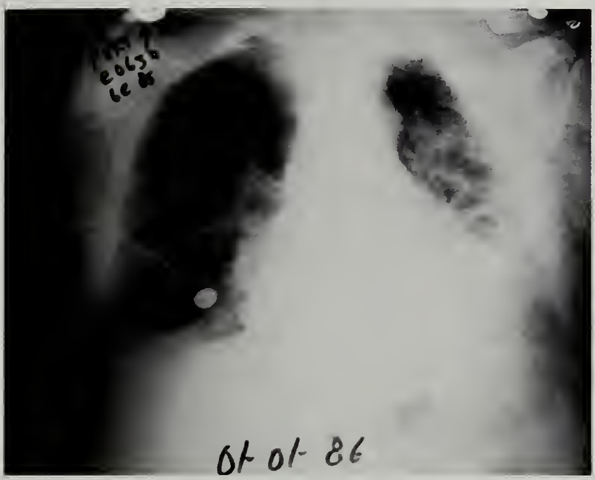

FIGURE 1

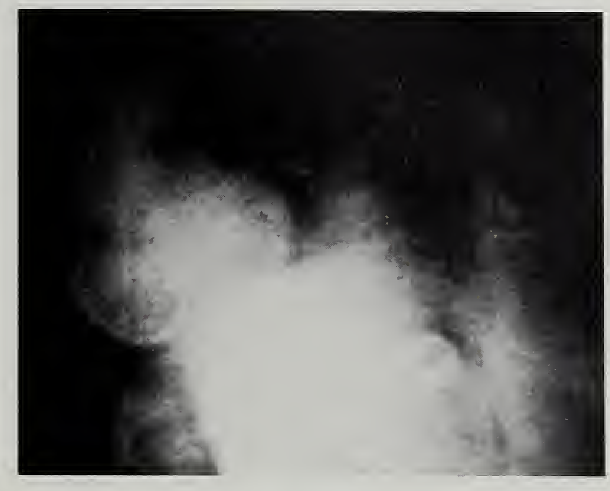

FIGURE 2

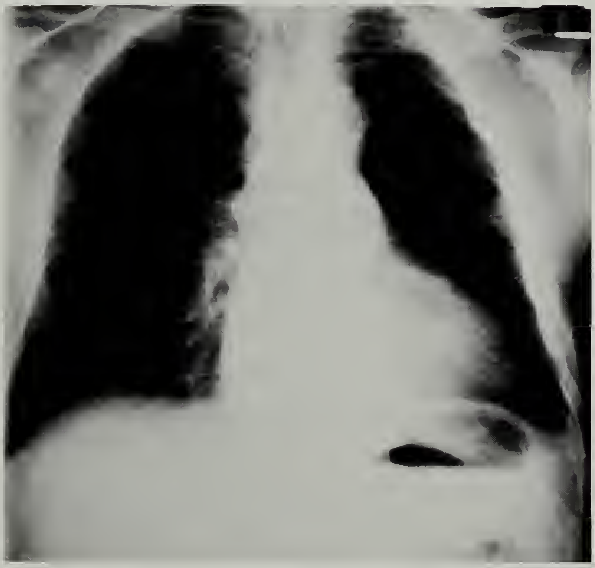

FIGURE 3A

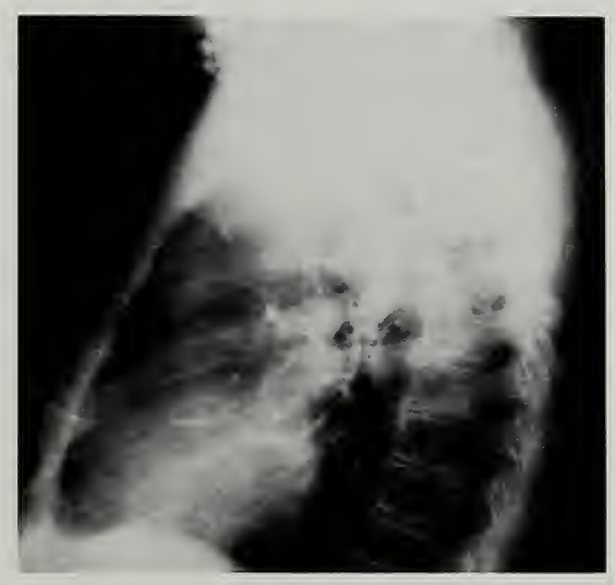

FIGURE 3B

Aortic valve rupture is reported in two distinct settings; rupture of a previously diseased valve and rupture of a normal valve. Initially, the former condition was more prevalent. Deceleration injuries now cause the vast majority of aortic valve ruptures in previously normal valves. Sudden severe muscular strain has been reported as the etiology in some cases. With trauma, other cardiac valves may be injured alone or in conjunction with the aortic valve, but isolated aortic valve injury is more common.

Aortic valve rupture may consist of a tear in a valve leaflet, or compromise of the supporting structure of the valve. A combination of these two injuries may exist, as seen in our patient. The injury is felt to result from rapid deceleration in early diastole. The column of blood in the ascending aorta is thrown against the closed aortic valve with such force that one of the leaflets is torn. A sudden steep rise in intra-aortic pressure may be caused by compression of the thorax or abdomen with the same result. The non-coronary leaflet is most commonly involved, suggesting that runoff into the coronary arterial system protects the coronary leaflets by reducing the hydrostatic force against them. A commonly associated injury is a tear in the intima of the ascending aorta just above the valve commissures. The force against the closed valve pulls the commissure off of the wall of the aorta. This may occur as an isolated injury and may be the cause of severe aortic insufficiency even if the leaflets are intact. It may also lead to acute aortic dissection.

Severe acute aortic insufficiency results from aortic valve rupture. Because of its rapid onset this hemodynamic alteration is poorly tolerated. There is a sudden regurgitant volume load on the left ventricle and a resultant increase in end diastolic pressure. There is an increase in myocardial work demand to maintain a satisfactory cardiac output. Myocardial decompensation may ensue. As myocardial work load rises and LVEDP rises myocardial ischemia and infarction become imminent. The increase in LVEDP may become high enough to cause elevation of pulmonary venous and capillary pressures leading to pulmonary edema and pulmonary decompensation. Low output syndrome also leads to pre-renal failure and dysfunction in other organ systems. Untreated, severe acute aortic insufficiency is almost uniformly fatal.

Because of the dismal prognosis associated with untreated aortic insufficiency caused by valve rupture, early diagnosis and treatment are essential. The diagnosis may not be readily apparent. It may be overlooked in the face of associated multiple injuries. If a murmur is present, it may not be known if it is old or of recent onset. Knowledge of previous physical findings is extremely helpful. Najafi defines four criteria helpful in arriving at the diagnosis: (1) history of trauma, (2) normal heart on recent physical exam, (3) sudden onset of aortic insufficiency soon after the accident, and (4) exclusion of other causes of aortic insufficiency.[6] An additional diagnostic aid described by Bean and Schmidt is the "disappearing diastolic pressure."[7] They observed that in trauma patients a normal diastolic pressure that declines significantly or falls to zero is associated with aortic valve rupture and aortic insufficiency. In our patient, diastolic hypotension reverted to normal following valve replacement.

Once suspected, the diagnosis is readily confirmed by angiography. Following confirmation, surgery should be performed as soon as possible.

SUMMARY

The diagnosis of traumatic aortic valve rupture may be difficult to make. This injury results in severely altered hemodynamics. If untreated, this in turn may lead to progressive multi-system failure and ultimately to death.

Treatment consists of aortic valve replacement or repair. Although the injury was well described prior to the 1960s, no successful treatment was known. In 1953, Bean prophetically stated "The time may come when surgeons will be able to repair such terrible damage and save the patient."[8] Since the advent of safe cardiopulmonary bypass and modern prosthetic valves, that time has arrived. ☐

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REVERENCE FOR LIFE IN CLINICAL PRACTICE

C. D. BESSINGER, JR., M.D.*

The usual algorithms for clinical decision-making are in a sense "reductionist." They mostly rely on identification and classification of a problem according to its constituent parts, and attempt to follow with ever-narrowing focus a branching network ("decision tree") toward a precise protocol for action in the particular case. Such a "rules-based" method may be quite helpful in dealing with well-structured problems in simple systems. Yet reductionist methods are not as well-suited to dealing with interacting systems or poorly structured problems.[1]

The clinical case which presents an ethical challenge is typically quite complex, and places the decision maker in a field influenced by many interacting forces. The principal forces are science (the full spectrum of knowledge bearing on the problems), technology (the tools available and the pressure to use them), economics (the costs and benefits to all concerned), and law (the rules and regulations defining limits). Of course in this context, ethics refers not to a code of rules, but to the whole enterprise of making correct decisions.

In the clinical situation, the lives of the patient, clinicians, family members and others are all interrelated. All of the "forces" mentioned above bear in some measure on each of them. The system is too complex to yield "correct decisions" from a structured protocol alone. In the complex system, the decision maker is concerned less with the "parts" than with the whole. The ethical thought system becomes not reductionist, but holistic or global. It must be developed from an ethical principle which defines the attitudes of all involved and at every level. It must govern the whole field and provide the basis for self-testing of proposed solutions.

In a recent communication,[2] this author examined the application of Albert Schweitzer's philosophy of reverence for life to current problems in medical ethics. Reverence for life is an ethical attitude that arises from the awareness of one's own existence and of "will-to-live." This innate and unconscious dynamic for survival is shared by all life. All life is complexly interrelated in its dependence on other life.

Ethics consist in becoming conscious of this interrelatedness, and in "experiencing the compulsion to show to all will-to-live the same reverence as I do to my own."[3] Further, it is good, not simply to preserve and to promote life, but also "to raise to its highest value life which is capable of development."[4]

Can such an "attitudinal ethic" be translated into a practical guide for ordinary decisions in everyday clinical practice? In this study we shall analyze a complex clinical situation in the light of Schweitzer's concept of reverence for life.

CASE REPORT

A white male was born in 1956 after a normal gestation and an uncomplicated labor. He was the only child of his 31-year-old mother and 38-year-old father, and weighed seven pounds one ounce (3.2 kg) at birth. At birth he was considered normal. At age six weeks cranial enlargement was described, but there was no other evident congenital deformity.

At age 26 months, a Holter valve was implanted when rapid growth in head size followed a period of stability. It functioned poorly and was revised at age 28 months. The child had not sat unsupported or crawled. His extremities were "stiff," but without evidence of spasticity, and there was no evident motor defect. Focal motor seizures were recorded at age three years, and recurred periodically throughout his life.

During his childhood and teenage years, the patient continued to be cared for by his parents at home, though there were several hospital admissions for pneumonia. He gradually developed multiple secondary deformities including extreme kyphoscoliosis and limb contractures. He was incontinent of urine and feces, and required total care. He developed some ability to talk, and eventually received a certificate of completion of twelve years of home instruction.

At age 22, during a hospitalization for pneumonia, emergency ventilator support via endo-

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tracheal intubation was instituted. Tracheostomy was done later, and the patient was eventually weaned from the respirator and discharged. Feeding was maintained by nasogastric tube after feeding gastrostomy proved technically impracticable due to the anatomic distortion. After discharge home, he returned to oral liquid formula feedings but continued to require the tracheostomy due to sleep apnea and to increasingly severe pulmonary restriction by the kyphoscoliosis.

At age 29, a custom length tracheostomy appliance was ordered because weight gain had exacerbated the distortion of the neck and prevented maintaining a proper fit of standard appliances. The patient became apneic en route to the hospital for that replacement procedure, but was resuscitated by his parents. The new appliance functioned well, but the patient could not be discharged due to his restrictive impairment.

That impairment lead to increasing hypoxia and hypercarbia, and the patient remained in hospital until his death two months later. At the parents' insistence, the patient was placed on the ventilator. Several attempts to wean him were unsuccessful, and subsequent aggressive efforts in the intensive care unit included venous cutdown, multiple antibiotics and vasopressors, multiple consultants, and multiple monitoring modalities.

CASE ANALYSIS

This severely handicapped patient far outlived his life expectancy due in large measure to the dedicated and loving care of his parents. In their efforts they were motivated by, and sustained by, their strong fundamentalist faith. There seems from the medical record to have been an initial reluctance to seek neurosurgical consultation, in part in expectation of a miracle. Yet in subsequent years, there was full reliance on medical skill and technology, and firm insistence that every means of survival be sought. The parents maintained throughout that "everything possible should be done." It was.

The ethical issues raised in the earlier years of this patient's life were not particularly complex. The hydrocephalus was palliated by the available appropriate procedure, and the situation did not present critical "Baby Doe" issues. The family made the adjustments necessary to deal with a difficult situation, with support from various specialists as necessary.

The author made first contact with the patient at the time of his tracheostomy. The patient was already being ventilated by endotracheal tube in response to acute respiratory failure, with the prospect for weaning which was eventually accomplished. There was considerably more discussion about the advisability of attempting gastrostomy which was recommended by the attending physician and readily accepted and advocated by the parents. The surgeon's (author's) note reflected concern that the extensive deformity raised the operative risk in an irreversible situation, and noted that the (eventually unsuccessful) attempt was considered more palliative for the parents than the patient. However, the parents viewed the prospect of not attempting something that might be helpful as a threat to the patient's survival.

The ethical issues presented during the last few months of life were considerably greater. The paramount ethical issue in patient care is the character of the professional approach to the patient and the family. For most of the physicians and nurses caring for him, the patient was the most deformed they had encountered, yet they responded effectively and supportively.

The more complex issues dealt with treatment choices. During the time of multiple adjustments of tracheal appliance, attempts were made to educate the parents that the respiratory problem was not only irreversible but progressive. The response was to urge continued efforts, and to insist on ordering a customized appliance. Yet even the design of such an appliance presented an ethical question. Should the device be uncuffed to maintain an airway so long as the patient could breathe naturally, or should it be cuffed to facilitate eventual artificial ventilation?

Despite the uncuffed tube, ventilation was eventually initiated at the insistence of the parents. Yet how invasive and how aggressive must one be in an irreversible situation? To what extent may the parent's wishes override medical judgment about what is effective treatment? To what extent is an ineffective treatment harmful? In this context, is isolation from parental support of an aware and dependent patient in an intensive care unit a valid harm? Is expenditure for ineffective care a valid harm?

DISCUSSION

The parents of this patient did not specifically express their philosophy in terms of "right to life," but the rigid insistence on efforts toward survival at all costs seems consistent with that approach. The ethic of "right to life" focuses on the immediate clinical problem of the particular patient, and chooses specific measures according rules of protocol. Reduced to its most basic "rule," the ethic of "right to life" asks whether the patient is alive. If so, all measures must be taken in the hope of survival.

By contrast, the ethic of "reverence for life" as presented by Schweitzer is more reflective. While no less dedicated in its respect for life, it sees individual lives within the context of all life. It realistically accepts life and its limitations, and the limitations of medical therapy. It acknowledges that each life interacts with other life. It accepts that since all lives must live at the expense of other life, choices must inevitably be made. It governs the attitude in which choices are made. It provides the standard against which choices may be evaluated.

Solving clinical problems in accordance with reverence for life requires posing appropriate questions rather than applying rules. It does not rely on purely subjective determinations such as "quality of life" or utilitarian rating scales. Reverence for life is instead an attitude which prompts asking whether a proposed action will help promote, preserve or develop life. It asks whether some alternative would be more effective. It asks to what extent an action will harm the life in question, and other lives.

If all parties to this patient's care, including the parents, had proceeded in accordance with "reverence for life" rather than "right to life," the results of treatment would have been the same: the patient would have died of his irreversible disease. However, there could have been important differences in his clinical management.

The patient's condition had been acknowledged to be irreversible and progressive at the time mechanical ventilation was initiated. At that point, "reverence for life" would have accepted with equanimity the limitations of life processes and of therapy. It would have sought to support the dignity of the remaining life, while seeking to avoid the harms inherent in inflicting ineffective and unnecessary interventions. Such harms include the pain and discomforts of the treatments themselves, the emotional pain of isolation from family support, and the useless expenditure of financial resources of family and society.

There is of course a critical distinction between withholding a treatment which may serve to promote or preserve life, and withholding one because it is judged to be ineffective for that purpose. Reverence for life always seeks to preserve life and never seeks the taking of it. Yet it understands that life processes and medical treatment have their natural limits, and does not confuse the withholding of an ineffectual treatment with the taking of life.

The ethic of reverence for life is well-suited to deal with complicated clinical problems because it is derived from awareness of the interactions of all life. The very breadth of its global view forces a new approach to the traditional problem-focused clinical encounter. Considering the global or holistic view does not provide an easy formula for ethical problem-solving. It does, however, provide a helpful perspective from which to make "correct decisions" in today's complex clinical situations.

SUMMARY

Clinical cases which present an ethical challenge are typically quite complex. They are not well-suited to solution by reductionist methods or structured protocols, but require a holistic or global approach appropriate to interacting systems. The concept of reverence for life presented by Albert Schweitzer is an "attitudinal" ethic based on a broad view of life as an interacting system. In this study, a complex clinical situation is used to illustrate the applicability of that ethic to clinical decision-making. ☐

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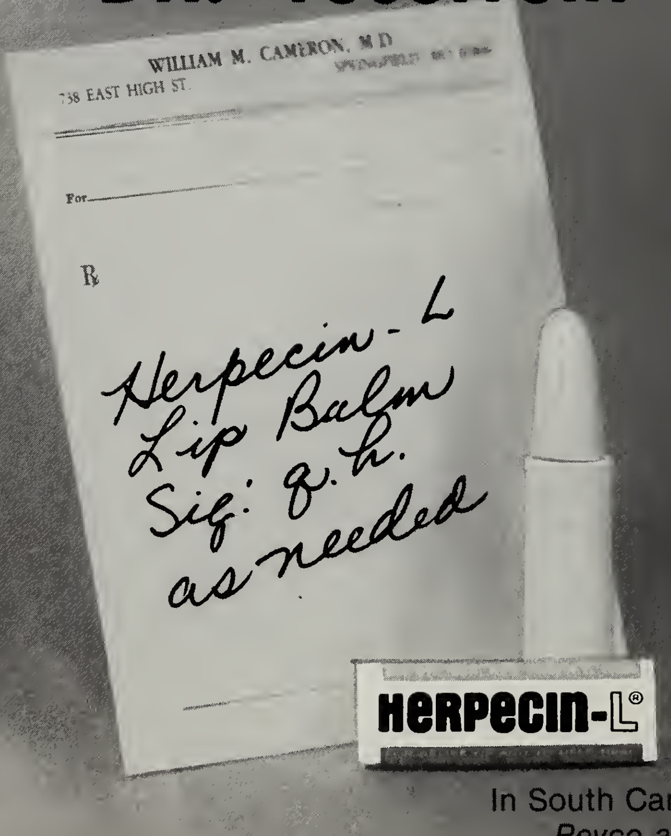

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THE INTERIM MEETING OF THE AMA — LAS VEGAS, NEVADA, DECEMBER 5-10, 1986: REPORT OF THE SCMA DELEGATION

JOHN C. HAWK, JR., M.D.*

At most sessions of the AMA House of Delegates there is one major issue which seems to dominate the scene. At the 1986 Interim Meeting there were *two* concerns of transcendent importance, and at least *three* others which bid for attention.

MEDICARE PARTICIPATION

As could have been predicted in advance, the new Medicare regulations regarding "participating" and "non-participating" physicians provided a hot topic, especially since the December 31 deadline for decision loomed large for all physicians. Indeed this was a major concern of the convention. The AMA had prepared a special handout of excerpts from the *AM News* of November 21 and 28, and December 5, which included a section on "How to Determine Your MAAC for 1987." MAAC is, of course, an acronym for "*M*aximum *A*llowance *A*ctual *C*harge" for "non-participating" physicians. At the Reference Committee hearings, many testified to the incredible complexity of the regulations requiring detailed calculations of allowable charges for each procedure performed by a physician. It was noted that much of the information required for such calculations was not yet available from the intermediaries. Most physicians have been "non-participating" in the past, (although a vast majority have accepted assignment where appropriate on an individual case by case basis), and probably most would prefer to retain such status. It was felt by many that the chief purpose of these regulations was to stampede physicians into signing Participating Agreements before the deadline.

An emergency resolution from the New York delegation asked the AMA to take whatever steps are necessary to obtain injunctive relief to enjoin implementation of the Medicare Part B provisions of the Omnibus Budget Reconciliation Act of 1986. This was accepted as an important item of business and was passed by the House. Before the meeting concluded, Dr. James Sammons, Executive Vice-President, assured the House that such injunctive relief would be sought vigorously. As this report is being completed, I have just received a copy of United States District Judge Holbert O. Woodward's order (issued in Lubbock, Texas, on December 30) granting a temporary injunction to restrain the government from enforcing these regulations for the brief period of January 1 to January 9, that is until a full hearing has been accomplished. At this writing, it still remains to be seen whether a more permanent solution, in the form of repeal or major modification of the entire "participating-nonparticipating" program can be achieved. Likewise it is not known at this time what percentage of physicians will indeed have been "stampeded" into signing a Participating Agreement before the December 31 deadline.

DRG's FOR PHYSICIANS

The second important issue came as a little "bOMBshell" early in the meeting when it was announced that the Office of Management and Budget (OMB) was preparing to recommend that the President's budget include a plan to roll physician reimbursement under Medicare into payments to hospitals under the DRG program.

The House adopted a resolution directing that adequate and appropriate resources of the Federation of American Medicine be mobilized immediately to impress upon the President and Congress the danger this proposal represents and the threat it poses to the American people.

Many members of the House contacted their Congressmen and Senators, particularly those on the Republican side since this proposal would come through the White House. The AMA issued the following statement:

"The proposal is unrealistic, unreasonable, unwise, and unhealthy for our senior citizens and other beneficiaries of the Medicare program. Merely saying that such a system would be almost impossible to administer, or that the proposal is premature, since Congress has already mandated a study of physician payment systems under Medicare, only addresses the fringes of OMB's proposal.

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"The real point of this is that the proposal represents just one more step on the road to rationing of care for Medicare beneficiaries. We simply don't think that's acceptable; and we believe that Medicare beneficiaries will join us in resisting these proposals ultimately aimed at rationing medical care."

At the time of this writing, the original proposal from OMB has been modified, but there is still the proposal to include hospital-based physicians (pathologists, radiologists, and anesthesiologists) in DRG payments to hospitals. The AMA and State Associations have mounted vigorous opposition to this unacceptable program.

OTHER ITEMS OF PRESSING CONCERN

There were three other items of pressing concern to the House:

Tort Reform: In his address to the House, President John J. Coury, Jr. emphasized that achieving Tort Reform at the federal level will remain a top priority of the Association in 1987. Polls of the membership have indicated that this is the Number One concern of most physicians. Dr. Coury also announced that the AMA, looking to the future beyond Tort Reform, is designing an "alternative system" for settling professional liability claims.

PRO: The many problems that have arisen under the federal government's Professional Review Organization (PRO) program engendered a great deal of comment and debate. Particular concern was expressed in regard to reports that PRO's are notifying beneficiaries of denial of payment for care because of a PRO determination that the quality of services provided does not meet professionally recognized standards of health care. This has frequently occurred before the physician has had an opportunity to obtain PRO reconsideration and before the physician has exhausted his rights to judicial review of adverse decisions. The AMA will develop draft federal legislation to correct this problem.

In addition, the House referred to the Board of Trustees *for action* a resolution which asked the AMA to:

- Communicate with the Department of Health and Human Services the AMA's desire to seek greater PRO discretion in the determination and handling of sanction recommendations.
- Undertake legal action, as appropriate, to assure that physicians are accorded due process appeal rights in the course of PRO sanction and appeal processes.
- Urge that reconsiderations and appeals of PRO actions be heard before *panels of physicians in active practice.*

The House also adopted a resolution asking the AMA to enlist the aid of Medicare patients by encouraging *them* to voice any valid concerns about the PRO program to their elected federal officials and to encourage individual physicians to assist patients in such valid complaints and to forward these complaints also to the AMA.

Medicare Restrictions in Massachusetts: The restrictions on freedom to contract under Medicare imposed on physicians in Massachusetts have received much attention during the past year. In that state, accepting Medicare assignment has been mandated as a condition of licensure. One resolution called upon the AMA to declare a national day of mourning for this loss of the right to contract between Massachusetts physicians and their Medicare patients and to hold a symbolic service in every state in the federation to dramatize the ill effects of this law. After much discussion, this was not passed by the House, as it was felt that there might be adverse effects and hazards from such an action. However, a substitute resolution was passed directing the AMA to continue to pursue with the Massachusetts Medical Society judicial and/or legislative relief, to assist other state medical societies to prevent the adoption of similar legislation, and to inform the public of the great hazards of such legislation.

OTHER ITEMS OF BUSINESS

The House considered a total of 95 reports and 143 resolutions, the largest volume of business ever submitted to an Interim Meeting. These have been reported in some detail in the *AM News* of December 19. Every physician should review that issue carefully in order to keep up with the many important topics considered by the AMA House of Delegates and the actions taken.

In a major effort to strengthen public and professional confidence in the AMA, the delegates adopted a proposed "New Strategic Plan" for the Association.

As adopted by the House, the AMA's new key objective reads: "The key objective of the American Medical Association is to contribute to the professional and personal development of member physicians and to the betterment of the health of the public by developing and distributing information; by advocating health-related rights, responsibilities, and issues; and by representing the profession as a whole where the image, expertise, and national scope of the AMA prove useful. This is to be done in a manner that is cost-effective, protects physician autonomy and self-determination, improves the practice of medicine, and builds public confidence in the competence and the reliability of physicians."

Four strategies were outlined to be utilized in achieving this objective. They will receive more publicity and attention during the coming years.

The consolidated budget for the fiscal year 1987 was adopted. It called for *no dues increase* in 1987. Operating revenues are projected at $151,410,000 and operating expenses at $147,190,000.

ADDRESS BY U. S. ATTORNEY GENERAL EDWIN MEESE

The Honorable Edwin Meese, III addressed the House at its opening session, which was held on Sunday morning rather than in the afternoon, in order to accommodate his schedule. He stressed the Reagan Administration's commitment to the American family and praised the efforts of the medical profession in combating alcohol and drug abuse. He also assured the delegates that physicians need not fear running afoul of antitrust laws while involved in good faith peer review. He said "far from being at odds with federal antitrust laws, peer review fosters the basic goal of those laws, and that is the efficient delivery of quality service in a competitive marketplace."

Mr. Meese also participated in the well-attended FORUM on Medical Affairs held Saturday afternoon on the topic, "The War on Drugs — How Can It Be Won — What is Medicine's Role?"

YOUNG PHYSICIANS SECTION

At the 1986 Annual Meeting, the House of Delegates authorized the formation of a Young Physicians Section which held its first meeting just prior to the House of Delegates at Las Vegas.

Dr. Roger Gaddy of Winnsboro and Dr. James Lindsey of Conway were chosen by the SCMA Board of Trustees to represent South Carolina at this meeting. They also joined us for some of the activities of the House. At the present time, the SCMA is in the process of setting up a state Young Physicians Section, and in the future it is planned that the Young Physicians will elect directly their representatives to the Young Physicians Section of the AMA.

It was gratifying that Roger Gaddy was elected chairman of the Southeastern Caucus of the Young Physicians Section.

RESIDENT AND STUDENT REPRESENTATION ON COUNCIL ON ETHICAL AND JUDICIAL AFFAIRS

At the 1986 Annual Meeting, the Board of Trustees Report GG endorsed the addition of a student and a resident member to the Council on Ethical and Judicial Affairs. The House was informed that the Board would study methods of selection, participation and tenure, and these were forthcoming in Report E of the Board of Trustees at the Interim Meeting. After considerable discussion, both in the Reference Committee and on the floor of the House of Delegates, the House voted to place a medical student and a resident physician member on this important Council, to be elected in the same manner as the other seven members, that is by nomination of the President and endorsement by the House.

Some reservations were expressed about the propriety of this move, but the proposal was adopted by voice vote, and Bylaw amendments were subsequently approved also.

SCMA DELEGATION ACTIVITY

For several years the SCMA delegation has held an open hospitality room on Saturday night of each meeting, finding that this is a time that is particularly appropriate for a small state, as relatively few hospitality rooms are open on that particular night.

We had hoped that we could use this as an occasion to honor Waitus Tanner, who had decided not to run for another term as Delegate and was therefore attending his last meeting. Unfortunately, Waitus and his wife, Ginny, were committed to the meeting of the South Carolina Academy of Family Practice at Hilton Head, where Waitus was serving as President, and therefore could not get to Las Vegas until late that night. We therefore had to "settle" on a smaller private gathering of our delegation Tuesday night to give honor to Waitus. He has been a stalwart member of our delegation since 1979 and he and Ginny will be greatly missed.

The SCMA was represented at the Interim Meeting by the following: Waitus Tanner, Don Kilgore, and John Hawk, Delegates; Randy Smoak, Charlie Duncan, and Euta Colvin, Alternate Delegates; Walt Roberts, President; Tommy Rowland, Treasurer; Dan Brake, Chairman of the Board of Trustees; Ken Owens, Alternate Delegate-elect; Roger Gaddy and Jim Lindsey, Delegate and Alternate Delegate to the Young Physicians Section; Tommy Mack Grainger, Student Section; Bill Mahon and Barbara Whitaker, staff.

We were particularly delighted to have so many wives with us, including Ginny Tanner, Jean Kilgore, Saundra Smoak, Pat Duncan, Dorothy Colvin, Nancy Roberts, Isabelle Rowland, Joan Owens, and Maureen Mahon.

We were also pleased that several delegates to the Hospital Medical Staff Section and their wives were able to attend either our South Carolina Hospitality room or the Southeastern delegation reception on Monday night. These included Robert and Mary Hagerty, Charles and Francie Geer, and Larry and Barbara Lemel, all from Charleston; Al Cremer from Columbia; Jerry Powell of Anderson; and John Taylor from Greenville. We also welcomed Bob Taylor of Spartanburg, President of the American Academy of Family Practice, and his wife, Ann.

APPRECIATION AND INVITATION

Again your delegation expresses its appreciation for the opportunity of representing the SCMA at the AMA House of Delegates. Although we consider it an honor and a privilege, we would like to emphasize again that we also feel it is a responsibility to which we give our full commitment.

We reiterate that we cannot represent you fully unless we have input from you, the members of the SCMA. We welcome resolutions submitted to the SCMA House of Delegates for transmission to the AMA, individual suggestions for appropriate resolutions which we might consider for the AMA, and particularly your participation at the AMA meetings.

We would like to repeat that any member of the AMA can appear before a Reference Committee and give testimony in regard to any resolution or other item on the agenda of the committee. That is the place where you can give full expression to your thoughts and ideas.

Furthermore, each hospital in the state can be and should be represented at the Hospital Medical Staff Section, where many important ideas are presented, and resolutions are developed for presentation before the House of Delegates. Students, residents, and young physicians are also encouraged to participate in their separate sections. Their input has been invaluable and will be welcomed in the future.

Finally, let me extend again our standing invitation for you to visit our SCMA suite at AMA meetings at any time. It is *your* suite! □

Editorials

"REVERENCE FOR LIFE": A UNIFYING CONCEPT FOR ETHICAL DECISION MAKING?

As for man, his days are as grass; as a flower of the field, so he flourisheth. For the wind passeth over it, and it is gone; and the place thereof shall know it no more.

— Psalm 103: 15, 16

The skilled gardener lavishes care on his grass and flowers — until withering and death become inevitable. He then accepts death calmly and prepares for the next crop. The physician, reflecting the values of society, continues to nurture the inevitably dying patient long after it has become obvious that the patient no longer profits from his toil. We are told that our expenditures for health care are unrealistic, and that one-half of these expenditures merely sustain life during its final year.

In this issue of *The Journal*, Dr. C. D. Bessinger, Jr., examines the concept of "reverence for life" as a unifying basis for ethical decision making. Taking his concept from Dr. Albert Schweitzer's *Philosophy of Civilization* (1923), Dr. Bessinger previously proposed that "reverence for life" applies not only to the care of the dying patient but also to the unborn patient, the proper use of scarce resources, corporate decision-making, and medical experimentation. He argued that "reverence for life does not yield to a generalized protocol" but rather "must be viewed as the field itself, in which clinical decisions are always formed in an attitude of 'sincere thought'."[1]

In this present paper, Dr. Bessinger illustrates this concept with a specific case history. A child born with hydrocephalus underwent successful shunting but required life-long custodial care by his parents until death occurred at age 29. The discussion revolves around the decision, two months prior to death, to place this patient on a ventilator and to administer intensive care. Dr. Bessinger argues that "the patient's condition had been acknowledged to be irreversible and progressive." At that point, the concept of "reverence for life" would have dictated that the dignity of the patient's remaining life be preserved but that ineffective and unnecessary interventions (presumably including placement of the patient on the ventilator) might best have been avoided.

In these two thoughtful papers, Dr. Bessinger thus seeks a single basis for resolving the difficult problems faced by clinicians and ethicists. He proposes the concept of "reverence for life" as an alternative to various other appeals to higher authority — such as *primum non nocere*, one or another specific oath, "laws of humanity," societal convenants, "boundary of the human," "community of values," "quality of life," utilitarianism, and situational relativism. In an editorial accompanying his first paper, Dr. Nora Bell, a philosopher, suggested that the discipline of medical ethics will assume increasing importance in medical schools and hospitals.[2] This is already becoming the case.

Dr. Bessinger's thesis should appeal to many persons who similarly seek a unifying principle for difficult medical decisions-making. Steeped in religious heritage and age-old truths, this concept or attitude has long colored the discussions between physicians and their patients or patients' families. Taken broadly, the concept of "reverence for life" might lead us to involve not only formally-trained ethicists but also (and perhaps most significantly) the clergy in these processes.

There remains the problem of how "reverence for life" should actually be utilized in day-to-day practice. However appealing the concept of *letting go* of expended life in order to *make room* for new life may seem in theory, there are strong ethical, emotional, and legal impediments to its use. The case described in this issue merely illustrates "what might have been done" rather than what was actually done for this specific patient. We see once more the potential for a family's financial ruination by medical care rendered with the full knowledge that the patient will never again enjoy the warm rays of the noonday sun.

We badly need a comfortable framework for thoughtful clinical application of age-old ethical, philosophical, and religious principles such as those skillfully articulated by Dr. Bessinger.

— CSB

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BOOKS FOR PRISONERS

We South Carolinians have a little known treasure in the state's Central Prison in Columbia. The treasure is to be found in the prison Library and is known as Frankie San. Frankie San is Japanese, born in Tokyo in 1927. He came to Columbia after World War II to study for the Christian ministry. Since that time he has devoted himself and his means to the prisoners in our State Central Corrections Institute.

For years he has quietly spent his time and resources in a personal ministry to the prisoners. In my contacts with Frankie San it has come to my attention that he is in need of books to supplement his Library. Probably all of you reading this have 20 or 30 good books around your house that you have read and won't use again. Please send them to the Central Corrections Institute Library, Box 11159, Columbia, care of Frankie San. Either drop them by or mail them and aid Frankie San in his very worthwhile work. Contributions to the Frankie San Foundation are tax deductible.

William H. Hunter, M.D.
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Clemson, S. C. 29631

LETTER TO THE EDITOR

To the Editor:

I want to compliment you on the July, 1986 issue of *The Journal of the South Carolina Medical Association*. It is gratifying to see *The Journal* devote an entire issue to the programs for long term health care for the elderly in South Carolina. As I am sure you are aware, the financing and administration of long term care services for the elderly is one of the most critical and complex issues being confronted in our state. In realizing this, the General Assembly enacted legislation (Act 83) in the general session of 1983 establishing the Health and Human Services Finance Commission as the single state agency for planning, financing and administering the Medicaid Program and the Social Services Block Grant Programs. (We're also responsible for administering the Medically Indigent Assistance Fund, with which many of your readers may be familiar.) The Commission became fully operational in July, 1984 and we feel that considerable progress has been made by this new agency of the State Government. The Commission is responsible for compliance with both federal and state mandates in the above areas.

As the number of older South Carolinians increases and the percentage of frail elderly rises, the need for both institutional and community based long term care services will also increase, making the demand for long term care services even more critical than it is today. The Health and Human Services Finance Commission, through both federal and state mandates, plays a key role in the planning, financing and administration of long term care services.

As I have indicated above, the Commission is designated as the single state agency for the administration of the Medicaid and Social Services Block Grant Programs. Thus, the majority of funding for institutional and community based long term care services for the elderly are funded through the Health and Human Services Finance Commission. Approximately 79% of the expenditures from all payment sources for nursing home beds in South Carolina are funded by the Medicaid Program. In addition to funding the major portion of institutional long term care services, the agency administers the Community Long Term Care Program which served over 5400 persons during FY 85-86. Also, adult day care and homemaker services are available to the elderly population under contract with various providers through the Social Services Block Grant Program.

Finally, the Commission is charged through both state and federal mandates to be responsible for health planning activities and maintaining statistical data regarding this population. During the last two years, the elderly population and their need for long term care services has been a major focus of the agency's health planning efforts.

We are especially pleased with the results of certain of our efforts in these areas during the past two years. Some of our major accomplishments are:

- — Development of prospective pricing system.
- — Reduction of paperwork for physicians and increasing fees while having the largest number of physicians ever enrolled.
- — Implementation of Medically Indigent Assistance Fund.
- — Development of alternatives to institutional services.
- — Resolution of the nursing home lawsuit against the state.

Again, I wish to thank you for *The Journal's* coverage of these critical areas of health care concern. I hope that the overall scope of the Health and Human Services Finance Commission's responsibilities, as indicated in the foregoing, will be included in future issues of *The Journal* whenever any of these programs are being reviewed.

Robert E. Robards, M.D.
Member, Fourth Congressional
District
State Health and Human Services
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303 Sassafras Drive
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PHYSICIAN RECOGNITION AWARDS

The following SCMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned.

Raymond E. Bradley, M.D.
Richard H. Crooks, M.D.
George C. Duncan, Jr., M.D.
Richard K. Harding, M.D.
Malvern C. Holland, M.D.
James W. Nichols, M.D.
Bonnie J. Ramsey, M.D.

ON THE COVER:
LEVI COKE STEPHENS, M.D.
1838-1909

Born in Colleton County, South Carolina, Levi Coke Stephens was the son of a South Carolina planter, Reuben Stephens, who raised Levi Coke Stephens in the traditional manner of a plantation youth. Of particular interest was Reuben Stephens' devotion to education. Through his prominent position in the community, planter Stephens developed and became very attentive to the public school system in his area. As a member of the Board of Trustees, his interest in educational matters strongly influenced the securing of the best teachers available. Consequently, Levi Stephens was afforded an excellent preliminary education. Levi Stephens attended Furman University in Greenville in 1856, and afterwards studied medicine under the tutelage of his brother, Dr. Stephens of Blackville and later Dr. D. J. Cain of Charleston. He completed his training at the Medical College at Charleston in 1860 and began a practice of medicine in his home Colleton County.

The commencement of hostilities at the outbreak of the Confederate War led Dr. Stephens to join Hampton's Horse Artillery at Columbia. He participated with this highly decorated artillery unit and is reported to have participated in more than 100 battles. During his tenure with the Horse Artillery, Dr. Stephens was appointed as Surgeon to this battery in 1863 and remained there until the termination of the war. Dr. Stephens returned to his beleaguered southland and established a practice in Orangeburg County. He attempted to manage his plantation as well as practice medicine but, in 1873, he determined that he must devote his entire energy to his profession. He thus removed to Blackville and established a practice described as "phenomenally successful." He was active in both state and county medical politics and was a prominent citizen with membership in numerous civic and social organizations. He was a staunch member of the Methodist Episcopal Church. He and his wife had one son who attended Wofford College.

Dr. Stephens' interest in medical writing is witnessed by the numerous publications that bear his name in the issues of *The Transactions of the South Carolina Medical Association*, the predecessor of the present *Journal*. His subjects of interest included orthopedic cases, obstetric cases, urogenital cases, reports on disorders of the nervous system and the psychiatric conditions of morbid somnolence and narcolepsy.

During part of his medical training at Charleston, he was a member of a committee which prepared a resolution congratulating and thanking the faculty of the Summer School. It is interesting to speculate that Dr. Stephens may have been one of the students who presented the cup to Dr. Daniel J. C. Cain, his preceptor and a faculty member of the Summer School. The cup was the subject of last month's cover. Dr. Stephens served as President of the South Carolina Medical Association in 1897, and was Delegate to the American Medical Association in 1893 and 1894.

Dr. Stephens' obituary as listed in *The Journal of the South Carolina Medical Association*, Volume V, 1909, reports that, after 51 years of the practice of medicine in the state and as a war surgeon, Dr. Stephens died preparing for his twelfth trip to Caesar's Head.

— Thomas M. Leland, M.D., Ph.D.

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IN VITRO FERTILIZATION AND EMBRYO TRANSFER PROGRAM AT THE MEDICAL UNIVERSITY OF SOUTH CAROLINA*

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In vitro fertilization and embryo transfer (IVF&ET) has evolved into an acceptable medical therapy for certain infertile couples. The first human birth as a result of these procedures was announced in 1978 by Steptoe and Edwards in England.[1] Employing a similar method, Jones et al reported the first American birth in December, 1981.[2] Encouraged by these results, many such programs have developed throughout the world.

During the years 1982-1983, preliminary work was conducted for an IVF & ET program at the Medical University of South Carolina. This included site visits to the Eastern Virginia Medical School Program, the submission of a research protocol to the institutional review board and the establishment of the in vitro fertilization laboratory. Our program enrolled the first couple in November, 1984. This communication presents the results to date of our experience.

SUBJECTS AND METHODS

From November, 1984 through August, 1986, 17 couples of reproductive age were treated in 32 menstrual cycles. The women and their husbands were jointly counselled and signed an informed consent form outlining the details of the procedure. All couples had previously undergone extensive infertility investigations and treatment without success.

Beginning on day three of the menstrual cycle, the women were given intramuscular injections of human menopausal gonadotropin (hMG, Serono Laboratories Inc., Randolph, MA) in doses of two or three ampules (150 or 225 I.U.). Two patients were treated with clomiphene citrate plus hMG after inadequate responses to hMG only during their first cycles of treatment. Daily blood samples were drawn between 8:30 and 9:30 a.m. for determination of plasma 17-beta estradiol levels. On day seven of the cycle, real time pelvic ultrasonography (Advanced Technologies Labs, ATL-500, Bellevie, WA) was initiated to monitor follicular growth. When two or more of the leading follicles reach an average diameter of 15 mm or greater and the estradiol level exceeded 400 pg/ml, hMG stimulation was discontinued. Human chorionic gonadotropin (hCG, Ayers Laboratories, New York, N.Y.) 10,000 i.u. was given intramuscularly 24 to 56 hours after the last dose of hMG. Under general anesthesia, laparoscopic retrieval of ova was performed 32 to 36 hours after hCG administration. All visible follicles were aspirated using a single or double lumen needle. Heparinized phosphate buffered solution was utilized for follicle aspiration and washing of follicles in the event ova were not recovered on initial aspiration. The follicle aspirates and washings were immediately transferred to the adjacent in vitro fertilization laboratory through a small pass-through window. They were examined under dissecting and phase-contrast microscopes for ova. Those found were classified as immature, intermediate and mature according to the degrees of dispersion and mucification of the corona radiata and cumulus oophorus as reported by Veeck et al.[3] The patients were given Tetracycline therapy after the laparoscopy and until the day of embryo transfer to decrease the chances of inflammation in the cervical canal and the uterine cavity.

---

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On the day of ovum retrieval the semen was prepared by a "swim-up" technique in Ham's F-10 solution supplemented with 7.5 percent fetal cord serum. All culture media and fetal cord sera used in the procedures were previously tested and shown to support the in vitro growth of mouse embryos and survival of motile sperm. Approximately half a million motile sperm were added to each organ culture dish (Fisher Scientific Falcon #3037) containing an ovum. While the intermediate and mature ova were incubated for six to eight hours following their recovery before the addition of motile sperm, the immature oocytes were incubated for up to 24 hrs.

The gametes and the embryos were observed during a 12 to 24-hour interval for the presence of fertilization and/or cleavage. All normal appearing embryos at pronucleated or 2-12 celled stages were photographed and transferred through a catheter into the uterine fundus two to three days after fertilization. The transfer catheter was loaded via a side opening near the tip in the following sequence: 10 microliters of Ham's F-10 culture medium — 10 microliters of air — 35 microliters of medium containing the embryos — 10 microliters of air — 10 microliters of medium. The patient was placed in dorsal lithotomy position if her uterus was retroverted and in knee chest position when the uterus was anteverted. A hollow metallic guide was placed in the endocervical canal and the catheter was passed through the guide into the uterine fundus for a depth of 5 cm. After the contents of the catheter were discharged via an attached Tuberculin syringe, the catheter was withdrawn and observed microscopically to ensure the complete release of the embryos. The patient was kept at bed rest for four to six hours after the transfer. Daily intramuscular injections of 25 mg progesterone in oil were given until a plasma hCG immunoassay was performed 12 days after the transfer.

If the pregnancy test was positive, the patient was given 17-alpha hydroxy progesterone (Delalutin; Squibb Co.) 250 mg per week intramuscularly until 12 weeks of gestation.

RESULTS

There were 10 couples with tubal impairment, five with endometriosis and two with sperm autoimmunity as their primary infertility factors. The age of the patients was 32.8±4.7 (mean±SD) years. Nine of the 32 cycles were discontinued because of inadequate responses to hMG stimulation. In the remaining 23 cycles, laparoscopy was attempted for the retrieval of the follicular oocytes. Of the 23 laparoscopy cycles the dosage of hMG used was 15.6±3.9 (mean±S.D.) ampules per cycle. The duration of hMG treatment was 6.6±1.2 (mean±S.D.) days. The peak levels of serum 17-beta estradiol were 867.5±526.9 (mean±S.D.)pg/ml on day 10 and 965.3±370.1 pg/ml on day 11 of the menstrual cycle. The estradiol levels one day before and on the day of the laparoscopy were 590.6±231.4 pg/ml (mean±S.D.) and 824.2±270.9 pg/ml respectively. hCG injection was given on day 9.8±1.3 (mean±S.D.) with a range of day eight to day 13 of the cycle.

Eighty-three percent (20/23) patients had at least one egg retrieved. An average of 2.3 oocytes was retrieved per laparoscopy cycle. Seventy percent (41/59) of oocytes were classified as either intermediate or mature. In three laparoscopies no oocytes were recovered due to premature ovulation, pelvic adhesions or active endometriosis.

The fertilization rates for atrectic, immature, intermediate and mature oocytes were 0, 57, 79

TABLE I
The Result Of The In Vitro Fertilization And Embryo Transfer Program At the Medical University Of South Carolina Nov., 1984- Aug., 1986

		No.	%A	%B	%C	%D
A.	Cycles With Laparoscopy	23				
B.	Cycles With At Least One Egg Retrieved	20	87			
C.	Cycles With Fertilization	19	83	95		
D.	Cycles With Embryo Transfer	19	83	95	100	
E.	Number Of Pregnancies	4	17	20	21	21
F	Number Of Clinical Pregnancies	2	9	10	11	11

and 74 percent respectively with an overall rate of 59 percent.

A mean of 2.3 embryos were replaced per transfer cycle with 68.5 percent of the embryos in the four-to-eight celled stages.

Four pregnancies occurred among the 23 treatment cycles. Two were biochemical pregnancies. The other two proceeded normally for a clinical pregnancy rate of 8.7 percent per laparoscopy cycle and 11 percent per transfer cycle (Table I). A normal female infant weighing 6 lb. 9 oz. was delivered in December, 1985 and a normal male infant weighing 8 lb. 5 oz. in August, 1986.

DISCUSSION

The most common reason for the IVF & ET procedure is a tubal impairment with or without prior surgical correction. This comprises 52.9 percent (9/17) of our patient population. The other reasons included: pelvic endometriosis not responsive to medical or surgical treatment, low sperm count or other semen abnormalities, sperm immunity problems unresponsive to therapy, and unexplained infertility after complete investigation.

Seppala[4] reported a world-wide composite result of IVF & ET procedures performed in 1985 totaling 10,028 cycles by 65 teams. The overall clinical pregnancy rate per cycle was 11.1 percent with an average of 2.5 eggs retrieved and a 58.8 percent cleavage rate. Although our clinical pregnancy rate of 8.7 percent is lower, the mean number of 2.3 eggs recovered and 59 percent cleavage rate are comparable to the reported figures.

An IVF and ET procedure is composed of a series of highly technical steps requiring strict quality control and the dedication of the personnel involved. As a result, some new technical procedures such as intrauterine insemination, gamete intrafallopian transfer and cryopreservation of embryos have been added to the armamentarium of the infertility management.

SUMMARY

From November, 1984 through August, 1986, 17 infertile couples were treated in 32 menstrual cycles at the In Vitro Fertilization and Embryo Transfer Program of the Medical University of South Carolina. Laparoscopic retrieval of ova was attempted in 23 cycles resulting in four pregnancies. Two were biochemical pregnancies and the other two were delivered of normal term infants. □

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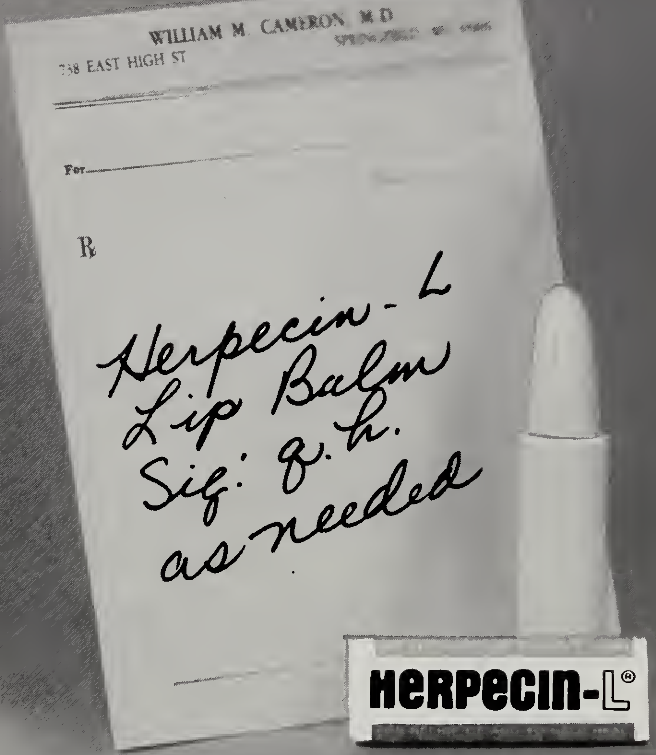
Dx: recurrent herpes labialis



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INVESTIGATION OF A CANCER CLUSTER IN A RURAL SOUTH CAROLINA AREA*

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In 1984, residents of one-square mile area in rural South Carolina bounded by two "swamps" (streams) reported a potential cancer cluster to their district medical director. Initial (undocumented) information obtained from these persons indicated that the total number of existing cancer cases was higher than might be expected. A check with local physicians verified these diagnoses. There was no major industry in this area. Most of the residents were farmers, with cotton and tobacco being the main crops. A number of the residents were employed in the surrounding towns in a variety of occupations. Based on the initial concerns, the following questions arose: (1) Are cancer rates elevated in the area? (2) If rates are elevated, can a cause or causes be identified and (3) Is the area an environmentally safe place to live?

METHODS

Three types of data (mortality, prevalence and incidence) were collected. Since the study area was defined by swamps rather than by district lines, collecting accurate data on morbidity and mortality could not be accomplished using standardly reported information. After the study area was carefully demarcated, cancer mortality data for a 14-year period (1970-1983) were collected by a manual death certificate search in which all deaths attributed to cancer from the general geographic area were obtained and the ones which occurred in the study area were noted. To obtain appropriate denominator data, a survey was made of the persons currently living in the study area. Due to the stability of the population, current figures were thought to be a good, though perhaps not ideal, estimate of the population over the entire time period. Additional purposes of the survey were to find existing (prevalent) cancer cases, to identify patterns of exposure to general factors known to be associated with cancer, and to classify all adults by age, race, sex, and length of residence in the area. Subjects were located and interviewed in their homes. The questions asked were general since the types of cancer initially reported represented many different sites. Included were questions concerning family history of cancer, medical (including reproductive) history, diet, tobacco use, alcohol use, and environmental or occupational exposures to suspected carcinogens.

Average annual incidence rates were estimated using July, 1984 survey data and mortality data for the 14-year period. These estimated rates do not take into account people who have moved out of the study area and developed cancer. However, very little in or out migration has occurred in the area for two generations. Also there were no indications of selective migration for those with or without cancer.

A series of environmental studies were also completed. Note that justification for undertaking difficult and expensive environmental testing was based more on the need to alleviate public concern than on specific hypotheses or findings.

---

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Water samples from wells and the swamps were checked for pollutants (nitrates, herbicides, pesticides, lead, and metals), dump sites were inspected for solid and hazardous wastes, sediment samples were analyzed for herbicide/pesticide content, and radiation measurements were taken from air, water, and soil. No adverse environmental parameters were found.

RESULTS

A census of the target area identified 64 households containing 134 persons over 18 years of age. The study group consisted of 65 men and 69 women. This is the same as the distribution of men and women in South Carolina. Over 65 percent of these people had lived at the same address for at least 15 years and 46 percent of the study residents were born there. There was one black family (two persons) in the target area; the rest were whites. The mean age of the adult residents was 44.5 years.

Cancer mortality for a 14-year period (1970-1983) was examined to determine if the number of cancer deaths observed during that time was within the expected range. State mortality figures and census data for each five-year age/sex group were used to calculate the expected number of total cancer deaths. The total number of expected cancer deaths was 4.77 (1.02 for women; 3.75 for men). Twelve cancer deaths were observed, all verified by death certificate. Six deaths occurred in women (SMR=5.9; 95% CI, 2.16-12.85) and six deaths occurred in men (SMR=1.6; 95% CI, .59-4.14). The same methods were used to calculate the expected number of site specific cancer deaths. Findings indicated significantly elevated SMRs for colon cancer in men and liver and uterine cancer in women (Table I).

We next looked at existing cancer cases. Thirteen (9.7 percent) of the study residents reported a personal cancer diagnosis. (All of these diagnoses were confirmed by the patients' physicians). When the four nonmelanoma skin cancers were excluded, the percentage of the total population reporting a diagnosis of cancer was 6.7 percent. However, these remaining cancers (three breast, two cervical, two colon, one kidney, and one thyroid) occurred only among women, thus the percentage of the female population with cancer was 13 percent. An interesting observation is the young age at diagnosis of most of these cases. Eight of the nine cancers among women were diagnosed at age 45 or younger.

TABLE I

Standard Mortality Ratio (SMR) by Sex and Cancer Site, 1970-83

	Number	SMR	95% Confidence Interval
Men			
Colon	3	20.18	(4.16-59.00)
Pancreas	1	11.83	(.30-65.72)
Stomach	1	15.60	(.40-86.67)
Leukemia	1	15.81	(.40-87.83)
All Sites	6	1.60	(.59- 4.14)
Women			
Liver	1	78.42	(1.98-435.64)
Uterine	1	47.08	(1.19-261.56)
Cervix	1	25.98	(.66-144.33)
Colon	1	6.48	(.16- 36.00)
Lung	1	4.58	(.12- 25.44)
Breast	1	3.04	(.08- 16.89)
All Sites	6	5.90	(2.16- 12.85)

Estimated annual incidence rates were 699 per 100,000 for men and 1576 per 100,000 for women. Expected average annual rates (based on data from the Surveillance, Epidemiology and End Results Program[1] were 371.6 per 100,000 for men and 301.2 per 100,000 for women. The resulting SIRs (1.8 for men and 5.2 for women) were higher than expected. However, only the female rate was statistically significant. The same methods were used to calculate the site specific measures. Findings indicated significantly elevated SIRs for liver, cervical and colon cancers in females. No significant elevations were found for men (Table II).

Comparisons regarding suspected risk factors were made between the cases and the female noncases. Two of the noncases were unable to give accurate exposure information and are not included in the analyses.

In terms of familial factors, all nine of the women with cancer reported other family members with cancer, while only 50 percent of the remaining 120 persons and 48 percent of the remaining women reported such a family history (p=.003).

Information concerning exposure to 19 known or potential carcinogens (such as asbestos, pesticides, pharmaceuticals, solvents and radiation) was explored. Individuals were categorized as ever versus never exposed. About half the time the percentage of cases exposed to these 19 agents was higher than in the noncases. None of these dif-

TABLE II

Standard Incidence Ratio (SIR) by Sex and Cancer Site, 1970-83

	Number	SIR	95% Confidence Interval
Men			
Colon	3	10.62	(.09-19.67)
Pancreas	1	10.98	(.28-61.00)
Stomach	1	10.60	(.27-58.90)
Leukemia	1	10.03	(.25-55.72)
All Sites	6	1.80	(.66- 3.92)
Women			
Liver	1	87.42	(2.21-485.69)
Cervix	3	21.26	(4.38- 62.16)
Colon	3	9.57	(1.97- 27.98)
Breast	4	1.08	(1.01- 9.46)
Kidney	1	20.01	(.51-111.17)
Lung	1	3.28	(.08- 18.22)
Uterine	1	2.87	(.07- 15.94)
Thyroid	1	13.36	(.34- 74.22)
All Sites	15	5.20	(2.91- 8.58)

ferences was statistically significant, though our power to detect differences was admittedly low.

The residents were asked how many times a day they ate red meat, milk products, fat, coffee, tea, and soft drinks. The mean daily intake for these items indicates that female cases consumed more fat and tea than female noncases. Conversely, noncases consumed more meat, milk products and caffeinated soft drinks. Again these differences were not statistically significant.

The reported use of tobacco (cigarettes, snuff and chewing tobacco) and alcohol (beer, wine and spirits) was considered. With the exception of past smoking history (cases were more likely than noncases to be past smokers — 33 percent versus 10 percent), no significant differences between female cases and noncases were found.

Reproductive histories, including age at menarche, age at menopause, age at first birth, parity and estrogen use, were collected from 63 of the 69 women, including the nine cancer cases. No statistically significant differences were noted when comparing women with cancer to those without cancer on any reproductive factors.

Questions concerning radiation treatments and unusual illnesses in the local animals were asked. Ten women reported receiving radiation treatments. Six of these people received the treatments because of a cancer diagnosis. Unusual illness in animals was reported by nine persons (six men and four women). Two women who reported this phenomenon had cancer themselves. The households with these reports were not clustered geographically in the study area.

DISCUSSION

Studies of disease clusters have led to many important discoveries in understanding the etiology of infectious diseases and in some instances, specific types of cancer.[2] For most cancers, however, the long latency period from exposure to diagnosis obscures any clustering relationship. If the cancers in a suspected cluster occur in the same site or are the same cell type, or occur in an unusual age group, the investigation may be productive as in the study of vaginal cancer and diethylstibesterol exposure.[3] However, in previous studies of cancer clusters very few have resulted in adequate explanations for the phenomena.[4, 5] Among those that have, the results indicate one of several possibilities: clustering because of familial cancer;[6] clustering due to common occupational[7], environmental or lifestyle exposures;[2, 3, 8] and clustering as a statistical artifact.[9, 10]

In this study, we used accepted statistical methods for calculating expected rates[11] and found elevated rates for both mortality and incidence for women. Genetic factors could possibly account for the excess number of cancer cases. The large proportion of current (prevalent) cases reporting a family history of cancer supports this idea. However, these reports were not documented and may be higher among the cases because of differential recall. Furthermore, none of the current cases clustered in the same family. This issue was not explored in the mortality study as family histories of cancer were not available for deceased persons. Future studies of cancer clusters should strive to include and document complete family information.

Environmental studies of the area did not identify a responsible substance. However, the ability to measure potential carcinogens is limited by current knowledge of carcinogenesis. Also, previous exposures that are not now measurable cannot be ruled out. As to lifestyle factors, no lifestyle factor occurred more frequently among the cases than the noncases. The same was true for occupational exposures. The rural location and the possibility that this may result in delay in seeking medical care was also considered. In this case, the excess cancer deaths would not necessarily reflect more cases of cancer, just a higher death rate from the cancers that did develop. However, this explanation does not explain the higher than expected estimated incidence rate for women.

Results may have been unduly influenced by the small number of events observed and the sampling method utilized. Since the number of cancer deaths was so small (even when counted over 14 years) a few deaths miscounted would have a *major* impact on the overall mortality rate. Also, the very small population in the study area made it problematic to apply national rates. More importantly, the fact that the group was chosen because of high observed numbers (not because of a suspected risk factor) made application of the usual statistical techniques and interpretation of significance levels difficult, if not impossible. Clearly, observations must be drawn at random from a defined population if a significance level is to be interpretable as a probability statement and thus meaningful.

Others have suggested that merely calculating the statistical significance of an observed cancer cluster is unproductive and that the best method to evaluate the significance of observed cancer clusters is through case-control studies that compare the case group's exposure to suspected risk factors with the control group's exposure to the same factors.[9, 12, 13] A comparison of those with and without cancer was a central part of this investigation, but added little to our understanding of the phenomena under study. (Probably because this "cluster" included many different kinds of cancer, each with different known risk factors.) A similar situation is likely to confront most investigators of cancer clusters. Because of these practical and theoretical problems, even an in-depth, thorough investigation of a cancer cluster may be unlikely to produce definitive results. However, it is often necessary to conduct such investigations to eliminate specific areas of concern within the community.

SUMMARY

Higher than expected cancer mortality and incidence rates were confirmed among residents of a one-square mile area in rural South Carolina. No one type of cancer predominated, and increased risk was significant only among females. The elevation in rates could not be explained on the basis of any environmental or lifestyle risk factor. Furthermore, because of the diversity of the cancer types observed it is unlikely that there was an underlying environmental or lifestyle factor common to all. ☐

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ALCOHOLISM: THE ILLUSION OF NORMALCY

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One of the most infamous illusions of our time, as will be reflected upon in future years, is the illusion that the addictions, alcohol and other drugs, are diseases in the sense that this word is used today. The very fact that there are no really effective programs which adequately combat or treat this alleged illness should at least sensitize us enough to re-examine our basic understanding of the etiology of this so-called disease state. That the Diagnostic and Statistical Manual III of the American Psychiatric Association only considers the acute manifestations of the syndrome in calling them Substance Abuse Disorders is not helpful in the least, being only descriptive in nature. The explanation of how these addictive states are in a real sense disease states is yet to be clearly stated and this essay is an attempt to give these states a more solid foundation and definition as to what kind of illness they actually represent.

One must state at the very outset that there are physiological changes that occur progressively over time as a "result" of the continued overuse of chemical substances which are alien to the body. The final end of alcohol abuse is the well known Korsakoff Syndrome. There is no doubt about the causative agent in this disease, nor as to how it comes about. But these must be considered end results of the toxicity of the chemical upon certain structures in the body. They cannot be considered as the cause of the excessive use of the chemical in question. To my knowledge, no one as yet has demonstrated that these chemical agents have any life of their own and insinuate themselves into their victims as a virus does. But the implication or hidden suggestion that alcohol, for example, possesses some mysterious quality which alters the human organism in such a manner that one no longer has a choice as to whether or not one will imbibe any more alcohol must be considered totally false and unproven. Alcohol, cocaine or heroin do not have the power of self-locomotion or of intrusiveness uninvited into the human organism. It must be put there by human action to begin the process, and of course, if one follows a logical course of reasoning, it is the motive behind the behavior of taking and placing a chemical substance in the body that essentially defines the so-called illness. The illness is not to be found in the substance. There is no mobility in a molecule of ethyl alcohol; only two atoms of carbon, six molecules of hydrogen and one atom of oxygen. There are no powers of replication in that combination of atoms as in the virus or as in the DNA molecule, only a destructive potential. It is the human factor that determines the course of the toxic illness that we call substance abuse and not primarily the chemical involved.

So we begin again, not with the substance being abused but with the human being who is doing the abusing. Perhaps, despite his seemingly normal appearance and behavior in between his bouts with his chosen substance, he is not so normal. His apparent normality may be a well-shielded illusion which society has been perpetrating all too readily for a number of years. It is a legitimate question to ask today in view of the poor record of helping agencies in either educating persons away from the use of addicting substances such as alcohol or in remedying the abuse patterns of addicted persons. One must hasten to dispel the notion that there is any moralizing in this question. It is posed as a legitimate query in order to broaden the base for the deeper investigation of the etiology of these alleged diseases.

One clue to begin with is one of the more successful treatment modalities for alcohol addiction: ALCOHOLICS ANONYMOUS. Behind their success is the one dictum: never touch another drop of alcohol! It is the first one that kills you. It is the first drink that disinhibits you and removes the power of choice and self judgment with respect to drinking more alcohol. No, not a single drop! With this simple truth, AA has helped more persons toward sobriety and a more productive life style than any other approach. It must be noted that the emphasis is on the person; it is the moral approach par excellence. They back up this dictum with a forgiving spirit and go out to help the one who falls into drinking again and supporting him through to becoming sober again and able to make rational choices. But they are aware, as most of scientific community is not aware, that the answer to these problems lies in the individual and nowhere else. No one can carry the responsibility of the choice to drink except that person himself. And they let them know it forcefully and without apology at their meetings. To the first-timer at AA meetings this comes as a rather rude shock. He has been swallowing the disease idea taught to him by a society bent upon removing all responsibility for anything and he comes to one of these meetings and is told by AA members that he "is" the responsible agent in his current state. That really hurts, and I have often seen the first-timer go out and really pull a bender in an attempt to put this idea to sleep in his brain. No one tries to softly convince him of his role in this process. He is just plain brutally told that he is the cause. So it is with the individual that the real truth may lie. Just maybe, despite his normal appearance and behavior between the debauches, there is something wrong with him. Perhaps there is some underlying causation for the use of chemical substances in his life which somehow do something for him which nothing else he knows of will do. This is precisely the area which needs to be most carefully explored: the individual and what the substance does "for" him.

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Let's look at the helping role of alcohol in the self treatment of situations which are anxiety provoking. It is a matter of common knowledge that alcohol serves the function of a social lubricant in our society. The cocktail party is specifically an American institution. The noise level for example is rather low at the beginning of such gatherings but wait on a while and shortly one notes that the shyness and fear of others are beginning to dissolve and people are becoming louder and louder. Soon one can hardly hear oneself think. What is happening? The anxiety in a new social situation is slowly dissolving under the anesthetic effect of ethyl alcohol. Inhibitions are being slowly washed away so that the participants in the party seem to be more outgoing, less afraid of the judgments others may be making of them, and the "care" factor disappears. One no longer really cares what others think about him. The anxiety in the social situation has been treated and all have a good time provided someone doesn't get too much and get too disinhibited and aggressive. So far so good; but, a lesson has been learned about this substance: it is a good antianxiety agent! Don't forget that. It may be a useful way to go in the future. And the pattern begins. Whenever the anxiety level reaches uncomfortable proportions, the prone individual who has learned this lesson will in all likelihood do it again. And the pattern of using alcohol as a self-prescribed antianxiety agent is under way. And so also is the addiction process. It will take a little more each time he does this; ever so gradually, but little by little it will require just a bit more and the quantity increases. And for a long time, years often, it works and never fails him. Alcohol is man's most useful, easily obtained, self-prescribed antianxiety agent and always has been. Drug companies have yet to match it in speed of performance and easy accessibility. What we have been describing, of course, is the history of the development of dependence on alcohol! It is always the first step in the addiction process and it is as simply explained as this. No mystery about it. But it is a more useful substance than this.

Those who have worked in the field of alcoholism know that those persons who abuse alcohol are often attempting to self-treat blue or depressed feelings. In fact many feel that the majority of addicted persons have at one time or another been attempting to ameliorate feelings of depression which come on after some loss in their lives, such as the death of a loved one or a parent, or even the loss or threatened loss of a job. All persons are subject to these feelings in response to loss or guilt and for the most part are able to work through them over time. Others, however, discover over the course of time that alcohol makes them feel good. And they are right. Alcohol does produce a high, a euphoric mood in people, and they do feel better and less depressed. For mild to moderate forms of depression it does work. Less well-known, however, is the fact that it tends to aggravate the more serious degrees of depression and to disinhibit the person enough to facilitate his taking his own life. Sometimes persons with the more extreme forms of emotional illness, with wide swings of mood and affect known as bipolar disorder, even try to treat themselves with alcohol to little avail. But they try. So it can be said then that for a lot of people alcohol serves as a very fast-acting, very available, non-prescribed, cheap, antidepressant drug which works for mild to moderate forms of depression. The only other drugs on the market that top it are, of course, the more powerful narcotics and mood elevators like cocaine, all of which are more rapidly addicting. One must not forget, however, that the addiction process is relentlessly at work all this time and becomes increasingly in evidence as time goes on and the person continues to use it. On a deeper level it must be pointed out, as Karl Meninger did some 30 years ago, that alcoholism is, in itself, a slow form of suicide.

There is a further observation to be made in which the use of alcohol to excess becomes a more serious problem. It is a bit hard to conceive that the intoxicated state is in actuality serving the individual, doing something "for" him at this stage, but it is. One can drink enough to make oneself unconscious by raising one's blood alcohol level high enough that the midbrain is anesthetized. One is unconscious and feeling no pain. In fact the earliest surgeons, the Arabs, knew this only too well and used wine to get their patients anesthetized enough to be able to do their surgery. The individual who drinks to this point must be considered as attempting either to do himself in, as some persons have, or as attempting to take himself out of some situation for a period of time, some situation which he conceives as intolerable. He is able, simply by getting himself "stone drunk" as some say, to regress to the point that someone is going to have to look after him. He has forced some responsible person into that taking care of role although he will stoutly deny it if and when he is confronted with this behavior. I will always remember the fellow who was retirement age and living with his mother who was about 86. He declared that he was "looking after" her. The truth of the matter was that she was still looking after him and taking care of his needs while he continued his drinking. This chemical manner of regressing is of course an almost exact metaphor of what the schizophrenic person does psychologically. And, if one carefully examines the behaviors of both when they are in the florid stage of their regression, they look remarkably alike. The chemical form of regression, however, is for a long time still reversible, whereas the psychological regression of the schizophrenic illness takes considerably longer. In fact if one looks carefully at the acutely intoxicated person who is still conscious, one will be astonished to note that his speech, mood, behavior, locomotion, and cognitive functioning clearly represent the Korsakoff Syndrome in acute form! It is manifestly clear then that this little molecule of ethyl alcohol is a remarkable chemical substance in the uses to which it can be put in the human being. We have indicated by example how it can function as an antianxiety agent. It has also been demonstrated that it can function as an antidepressant medication for the milder forms of depression. And lastly, we have shown that it can function in providing a period of regression into an almost infantile state similar to the schizophrenic regression in order to remove oneself from an intolerable situation. Of course it is not the chemical itself that is so remarkable but the multitude of uses to which the human being puts the drug. One of the favorite stories I have heard issued from an alcoholic who related one of his main reasons for drinking was to keep his blood stream sterilized so that he would not catch colds or the flu.

In conclusion, then, it must be stated that calling alcoholism a disease or any other substance abuse a disease is at the least misleading. No one has clearly defined what kind of disease they are talking about nor defined its locus. Millions have been spent in research attempts to show that there is something different in the physiology of the person who becomes an addict, to no avail. Genetic studies do seem to indicate that there possibly is a genetic disturbance of some sort that is passed on, but again the specific gene must be asked for today in order for that to be proved. It is our opinion that the substance abusers are indeed ill, mentally ill, and their use of chemical substances is their major defense mechanism which they control, initially at least, to their own advantage or in self treatment of underlying emotional disorders of all kinds. It has been said that denial is the major defense mechanism of the alcoholic. That is not true. Alcohol is his primary defense mechanism which he controls for his own use. Denial is simply ancillary to the process and secondary. Alcohol is a very powerful defense mechanism for him which he will not readily give up. One of the most astonishing statistics I have heard recently is that the utilization rate of the aversive treatment of alcoholism in the form of ANTABUSE is less than one percent! It is little wonder then that so little progress is being made in treating this still most serious substance abuse problem in the American culture. It is dangerous to draw analogies in this matter but perhaps substance abuse is like the disease of epilepsy in that the seizures represent the periodic manifestations of the underlying illness. Our contention is that the underlying illness, which gets so compounded with physical complications, is a form of mental illness. It is further contended that until we move to this understanding of this presently mystically defined disease we will make absolutely no progress in its treatment. □

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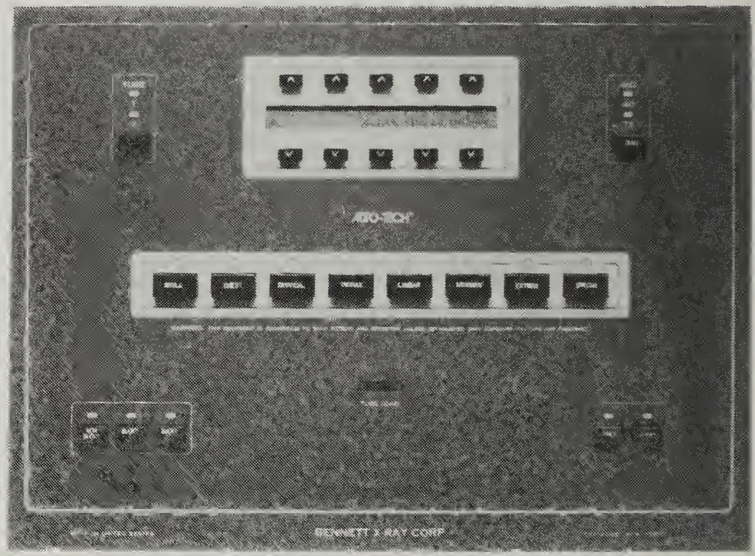

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BARTHOLIN GLAND CARCINOMA: A CASE REPORT AND REVIEW OF THE LITERATURE*

J. KEL HARPER, M.D.
ANSON H. STAGE, M.D.

Carcinoma of the vulva is the fourth most common female genital cancer behind endometrial, cervical, and ovarian — and accounts for three to five percent of these tumors. Primary carcinoma of the Bartholin gland is a rare type of vulva carcinoma, accounting for between two and seven percent of all vulvar carcinomas, and approximately one out of every thousand female genital malignancies. Bartholin gland carcinoma was first reported in 1865;[1] since then a number of authors[2-9] have brought the total number of cases reported in the literature to more than 200.

Case Report: Mrs. E.M.B. is a 75-year-old black female, gravida 1, para 0-0-1-0, who presented to her family physician because of a "lump" on the left side of her introitus for the past two to three years. She had had increasing discomfort, described as "burning," as well as a brown malodorous vaginal discharge for some two to three weeks prior to seeing her family physician; the lesion was biopsied and pathological diagnosis on the tissue was "adenocarcinoma, suggestive of a colon lesion." She was then referred to a general surgeon, who performed sigmoidoscopy and barium enema; each of these was negative.

Physical exam revealed a lesion in the region of the left Bartholin gland which was 3x3cms., indurated, with a 1.5cm ulcerated surface. The lesion was tender to palpation, well circumscribed, with mucous exuding from the depth of the lesion. There was no inguinal adenopathy. Pathology of the lesion was reviewed, and in light of the negative bowel workup, it was decided to proceed with radical vulvectomy and bilateral inguinal-femoral lymphadenectomy.

The diagnosis of mucinous adenocarcinoma of the Bartholin gland was confirmed pathologically; extensive cuts through the specimen revealed almost complete replacement of normal glandular structures by tumor. There were several areas with transistion from normal to neoplastic elements. There were clear margins with no evidence of lymph node metastisis. Post operative course was remarkable for an area of wound breakdown in the suprapubic area; this was treated conservatively with betadine dressings and granulated in well. Four weeks after discharge, the patient had incision and drainage of a 6 to 8cm. abscess of the left thigh, along the previous vulvectomy incision. Culture of the abscess was positive for group B betahemolytic streptococcus; the patient was treated initially with IV Penicillin and then with P.O. Amoxicillin, and did well. She has done well over the past three years with no symptoms or evidence of recurrence.

The Bartholin gland, also known as the greater vestibular gland, was first described in 1675 by Caspar Bartholin;[10] its normal anatomy was described initially by Cullen in 1905.[11] It is approximately 1cm. in length, located immediately posterior to the vestibular bulb and underlies the bulbocavernosus muscle on either side of the vagina. The gland lies between the superfical and deep perineal compartment, with a 2cm. duct passing obliquely to open just external to the hymen, near the middle of the vaginal orifice. The Bartholin gland functions to secrete mucoid material during sexual excitement.

The Bartholin gland is lined by a single layer of columnar epithelium. The duct from the vagina to the gland gradually increases in diameter, and divides into secondary and terminal portions. Near the vagina, the duct is lined with squamous epithelium, many cells layers thick; as the gland is approached, the epithelium changes to transitional and ultimately becomes columnar epitheli-

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um.

Lymphatic drainage from the Bartholin gland is primarily to the superficial inguinal and deep femoral nodes. The lymph may also drain directly to the deep pelvic nodes via the internal pudendal vessels.

The original criteria for diagnosis of carcinoma of the Bartholin gland were established in 1897 by Honan (cited by Masterson[4]), and are as follows:

1 — correct anatomic position of the tumor
2 — location of the tumor deep in the labia majora
3 — intact overlying skin
4 — the presence of some elements of normal glandular epithelium

However, these are strict criteria and are seldom followed, as advanced tumors with ulceration of the skin or large tumors that completely replace the normal elements of the gland would fail to meet these criteria. Thus, new criteria for diagnosis were established in 1972 by the Armed Forces Institute of Pathology,[8] and recently advocated by Copeland et al:[9]

1 — areas of apparent transition from normal to neoplastic elements
2 — histologic type of tumor consistent with Bartholin gland origin
3 — no evidence of a concurrent primary tumor elsewhere

Patients with Bartholin gland carcinoma have ranged in age from 14 to 91, with an average age of 49 to 53 years. The majority of patients are between the ages of 60 to 69, but roughly one-third are below the age of 50. Carcinoma of the Bartholin gland has been described in pregnancy, as reported by Drs. Dennis and Hester in 1955.[6]

The etiology of Bartholin gland carcinoma is unclear. Vulvar dystrophies and trauma are not felt to be contributing factors;[2] the significance of previous inflammation of the Bartholin gland is unknown. The most common presenting complaint in these patients is perineal pain or a vulvar mass. Dyspareunia, pruritis, or drainage from an abscess are also common manifestations. The duration of symptoms may range from several weeks up to 15 years. There is an unexplained predilection of the tumor for the left Bartholin gland.

Frequently, patients have a history of being treated by drainage and marsupialization with a presumptive diagnosis of an infected Bartholin gland cyst or abscess. Only when the incision does not heal are biopsies taken and the correct diagnosis made. DiSaia[12] states that uncomplicated inflammatory disease of the Bartholin gland is uncommon after the age of 40, and does not occur at all in the post-menopausal years; therefore, it is important to consider the diagnosis of cancer in any woman over the age of 40 with a Bartholin gland mass. Biopsy is recommended in the following situations:[8]

1. If induration is noted during incision or marsupialization of a Bartholin gland enlargement
2. If necrotic material is drained
3. If there is slow healing after drainage or marsupialization

Dodson[13] recommends routine cytology at the time of drainage marsupialization in older women with Bartholin gland masses. Lurmann[14] even suggests that all Bartholin gland enlargements be biopsied.

There are several histologic types of Bartholin gland carcinomas; squamous cell carcinoma and adenocarcinoma are the most common, accounting for 85 to 90 percent of cases.[2] Squamous cell carcinomas are similar to squamous carcinomas of other sites, with varying degrees of atypicism and varying amounts of keratin formation. Adenocarcinomas are often mucin producing and are usually well differentiated with little atypia. Adenoid cystic carcinoma, which has in the past been called cylindroma, has only recently been separated from the classification of adenocarcinoma. This rare subtype (only 20 cases have been reported) accounts for about one-third of the cases of adenocarcinoma. Even less common are transitional cell carcinomas, which are derived from the transitional cells which line the duct. The histology may also be mixed, usually containing adenocarcinoma with malignant squamous elements. Finally, the tumor may be undifferentiated.

Whatever the histology, all types of Bartholin gland carcinoma may metastasize to the inguinal-femoral lymph nodes. Squamous cell carcinoma appears more likely to metastasize than does adenocarcinoma, although the probability is not statistically significant.[2] Adenoid cystic carcinoma had not been associated with metastasis until 1978, when Wahlstrom[15] reported two cases with metastatic nodal involvement. Of all the histologic types described, adenoid cystic is the least likely to metastasize; it is characterized by a late local vulvar recurrence which may precede distant metastasis to the lung, liver, or bone.[16]

Prognosis for carcinoma of the Bartholin gland is worse than vulvar carcinoma because of its aggressive behavior. Prognosis is influenced by the size of the lesion, histologic type, aggressiveness of the tumor and host resistance, but the most important factor is the status of the inguinal-femoral lymph nodes.[2, 7] With metastasis to only one inguinal lymph node, five-year survival approaches 80 percent. With multiple positive groin nodes, on the other hand, five-year survival is less than 20 percent.[2] Overall five-year survival has ranged from 33 percent to 84 percent.[9, 17] The mean time of death has been reported to be approximately two and one-third years after the diagnosis is made.[2]

Until recently, most authors have recommended radical vulvectomy with bilateral inguinal-femoral node dissection.[7] In their review of 36 patients, Copeland et al[9] had satisfactory results using hemivulvectomy or wide local excision. As a result of the location of the Bartholin gland, surgical efforts to obtain tumor free margins may require resection of portions of the levator muscles, vagina, and/or rectum. Frozen section of the vulvar specimen at the time of surgery may be helpful to insure complete tumor removal.

Whether lymph node resection should be unilateral, bilateral, or include deep pelvic nodes is at this time controversial. In one review,[7] one of nine patients had contralateral groin metastasis; the author felt these data supported routine bilateral inguinal-femoral node dissection. Several early investigators recommended pelvic lymphadenectomy,[4, 5] but current studies do not substantiate this therapy.

A role for postoperative radiation therapy was suggested in 1984,[7] and recently encouraged by Copeland et al;[9] of the patients in Copeland's review who underwent limited surgery, ipsilateral inguinal lymphadenecotomy, as well as postoperative radiation to the vulva, inguinal nodes, and pelvic nodes, none have had recurrences, and all are alive at 24 to 48 months.[9] Postoperative radiation is felt to sufficiently manage subclinical isolated nodal spread to either contralateral inguinal or pelvic nodes.[9]

Recurrences are usually local but may appear in the pelvis; recurrence in the pelvis suggests pelvic node involvement.[7] Recurrence may also be distant, as evidenced by one patient who was status post radical vulvectomy and had no local recurrence but subsequently developed recurrence in the skull, hip, and lungs.[16]

Bartholin gland carcinoma is similar to primary vulvar carcinoma in that there is a high incidence of the development of secondary neoplasms. One study[18] revealed an incidence of 27 percent in patients treated for primary vulvar carcinoma. The incidence was 20 percent in Wheelock's 1984 review.[7] In both studies the majority of secondary neoplasms developed in hormonally-sensitive tissues such as the breast and genitalia. ☐

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Brief Summary

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CONTRAINDICATIONS: 1) Severe left ventricular dysfunction (see WARNINGS), 2) Hypotension (less than 90 mmHg systolic pressure) or cardiogenic shock, 3) Sick sinus syndrome or 2nd or 3rd degree AV block (except in patients with a functioning artificial ventricular pacemaker).

WARNINGS: Heart Failure: ISOPTIN should be avoided in patients with severe left ventricular dysfunction (see DRUG INTERACTIONS). Patients with milder ventricular dysfunction should, if possible, be controlled before verapamil treatment. Hypotension: ISOPTIN (verapamil HCl) may produce occasional symptomatic hypotension. Elevated Liver Enzymes: Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Periodic monitoring of liver function in patients receiving verapamil is therefore prudent. Accessory Bypass Tract (Wolff-Parkinson-White): Patients with paroxysmal and/or chronic atrial flutter or atrial fibrillation and a coexisting accessory AV pathway have developed increased antegrade conduction across the accessory pathway producing a very rapid ventricular response or ventricular fibrillation after receiving intravenous verapamil. While this has not been reported with oral verapamil, it should be considered a potential risk. Treatment is usually D.C.-cardioversion. Atrioventricular Block: The effect of verapamil on AV conduction and the SA node may cause asymptomatic 1st degree AV block and transient bradycardia. Higher degrees of AV block, while infrequent (0.8%), may require a reduction in dosage or, in rare instances, discontinuation of verapamil HCl. Patients with Hypertrophic Cardiomyopathy (IHSS): Although verapamil has been used in the therapy of patients with IHSS, severe cardiovascular decompensation and death have been noted in this patient population.

PRECAUTIONS: Impaired Hepatic or Renal Function: Verapamil is highly metabolized by the liver with about 70% of an administered dose excreted in the urine. In patients with impaired hepatic or renal function verapamil should be administered cautiously and the patients monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacological effects (see OVERDOSAGE).

Drug Interactions: Beta Blockers: Concomitant use of ISOPTIN and oral beta-adrenergic blocking agents may be beneficial in certain patients with chronic stable angina or hypertension, but available information is not sufficient to predict with confidence the effects of concurrent treatment in patients with left ventricular dysfunction or cardiac conduction abnormalities. Digitalis: Clinical use of verapamil in digitalized patients has shown the combination to be well tolerated if digoxin doses are properly adjusted. However, chronic verapamil treatment increases serum digoxin levels by 50 to 75% during the first week of therapy and this can result in digitalis toxicity. Upon discontinuation of ISOPTIN (verapamil HCl), the patient should be reassessed to avoid underdigitalization. Antihypertensive Agents: Verapamil administered concomitantly with oral antihypertensive agents (e.g., vasodilators, angiotensin-converting enzyme inhibitors, diuretics, beta blockers, prazosin) will usually have an additive effect on lowering blood pressure. Patients receiving these combinations should be appropriately monitored. Disopyramide: Disopyramide should not be administered within 48 hours before or 24 hours after verapamil administration. Quinidine: In patients with hypertrophic cardiomyopathy (IHSS), concomitant use of verapamil and quinidine resulted in significant hypotension. There has been a report of increased quinidine levels during verapamil therapy. Nitrates: The pharmacologic profile of verapamil and nitrates as well as clinical experience suggest beneficial interactions. Cimetidine: Two clinical trials have shown a lack of significant verapamil interaction with cimetidine. A third study showed cimetidine reduced verapamil clearance and increased elimination to 1/2. Anesthetic Agents: Verapamil may potentiate the activity of neuromuscular blocking agents and inhalation anesthetics. Carbamazepine: Verapamil may increase carbamazepine concentrations during combined therapy. Rifampin: Therapy with rifampin may markedly reduce oral verapamil bioavailability. Lithium: Verapamil may lower lithium levels in patient on chronic oral lithium therapy. Carcinogenesis, Mutagenesis, Impairment of Fertility: There was no evidence of a carcinogenic potential of verapamil administered to rats for two years. Verapamil was not mutagenic in the Ames test. Studies in female rats did not show impaired fertility. Effects on male fertility have not been determined. Pregnancy (Category C): There are no adequate and well-controlled studies in pregnant women. ISOPTIN crosses the placental barrier and can be detected in umbilical vein blood at delivery. This drug should be used during pregnancy, labor, and delivery, only if clearly needed. Nursing Mothers: ISOPTIN is excreted in human milk, therefore, nursing should be discontinued while verapamil is administered. Pediatric Use: Safety and efficacy of ISOPTIN in children below the age of 18 years have not been established.

ADVERSE REACTIONS: Constipation 8.4%, dizziness 3.5%, nausea 2.7%, hypotension 2.5%, edema 2.1%, headache 1.9%, CHF/pulmonary edema 1.8%, fatigue 1.7%, bradycardia 1.4%, 3° AV block 0.8%, flushing 0.1%, elevated liver enzymes (see WARNINGS). The following reactions, reported in less than 1.0% of patients, occurred under conditions (open trials, marketing experience) where a causal relationship is uncertain; they are mentioned to alert the physician to a possible relationship: angina pectoris, arthralgia and rash, AV block, blurred vision, cerebrovascular accident, chest pain, claudication, confusion, diarrhea, dry mouth, dyspnea, ecchymosis or bruising, equilibrium disorders, exanthema, gastrointestinal distress, gingival hyperplasia, gynecomastia, hair loss, hyperkeratosis, impotence, increased urination, insomnia, macules, muscle cramps, myocardial infarction, palpitations, paresthesia, psychotic symptoms, purpura (vasculitis), shakiness, somnolence, spotty menstruation, sweating, syncope, urticaria. Treatment of Acute Cardiovascular Adverse Reactions: Whenever severe hypotension or complete AV block occur following oral administration of verapamil, the appropriate emergency measures should be applied immediately, e.g., intravenously administered isoproterenol HCl, levarterenol bitartrate, atropine (all in the usual doses), or calcium gluconate (10% solution). If further support is necessary, inotropic agents (dopamine or dobutamine) may be administered. Actual treatment and dosage should depend on the severity and the clinical situation and the judgment and experience of the treating physician.

OVERDOSAGE: Treatment of overdosage should be supportive. Beta-adrenergic stimulation or parenteral administration of calcium solutions may increase calcium ion flux across the slow channel, and have been used effectively in treatment of deliberate overdosage with verapamil. Clinically significant hypotensive reactions or fixed high degree AV block should be treated with vasopressor agents or cardiac pacing, respectively. Asystole should be handled by the usual measures including cardiopulmonary resuscitation.

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Editorials

Former SCMA President Hunter — now better known as the sage from Pickens County — provides wisdom gleaned from his 30-odd years of practice in the following editorial.

— CSB

PHYSICIANS, BEWARE!

South Carolina is shaped like a piece of pie. Nestled among the mountains at its tip is the old Pendleton District, now composed of Anderson, Pickens, and Oconee Counties. At the foot of the mountains, where these counties come together, lies the little town of Clemson. Having seen much of the earth, I consider the area of the old Pendleton District to be the most beautiful in all creation. Although we have tried to keep this information to ourselves, the word is out and now the Yankees and everyone else are invading us.

Many members of the medical profession have also poured into our area. I have learned a great deal from these able and well-trained younger physicians. In the 30-odd years I've been practicing, I've watched with amazement at the more than tripling of the number of physicians in our area. One of my most shocking experiences recently has been that of younger physicians saying "yes, sir" and "no, sir" to me. I realized that my tenure here made me nearly the senior physician in these three counties — and I've just gotten into my 60s and am at least 20 years away from retirement!

To compound this cloak of seniority that I have somehow managed, I find that some of the younger physicians seek my advice from time to time regarding interpersonal relationships with their patients. I am not sure why this is the case. Perhaps it is because I do not seem threatening. Perhaps it is because my head now contains more white than yellow hairs, suggesting that I have managed to survive for a while.

Against this apologetic background, I offer twelve axioms or "bewares" that I believe should keep physicians — both young and old — away from most problems with their patients. I have learned some of these the hard way, from first-hand experience. I have learned some of them also from the experience of other physicians, and have borrowed one (number 6) from Harrison's *Principles of Internal Medicine.*

Here they are:

1. *Beware* of the whining, passive-aggressive patient who tells you how wonderful you are while explaining how bad her last doctor was.
2. *Beware* of the thin, neurotic and often attractive female patient accompanied by histrionic symptoms, who is eventually and invariably seductive.
3. *Beware* of out-of-town relatives of seriously ill patients, particularly those on the fringes of medicine — such as ambulance drivers, nurses' aides, and medical students.
4. *Beware* of taking sides in any divorce proceedings between your patients.
5. *Beware* of the patient's complaint uttered for the first time just as he or she starts to leave, often while placing his or her hand on the doorknob.
6. *Beware* of your lacking interest in any patient, whether poor or rich, wise or foolish, proud or humble, stoic hero or whining rogue.

7. *Beware* of the patient who has seen numerous physicians during the past year.
8. *Beware* of the patient who is constantly telling you how great you are.
9. *Beware* of not explaining medical costs to your patient.
10. *Beware* of not listening long and attentively to your patient's history.
11. *Beware* of playing God and thinking that you must be all things to your patients.
12. *Beware* of not realizing that a large majority of good medicine is the intuitive act of wooing nature.

— William H. Hunter, M.D.
One Hunter Court
Clemson, SC 29631

YOUNG PHYSICIANS AND SOCIAL CHANGE — A NEW CHALLENGE FOR ORGANIZED MEDICINE

In the preceding editorial, Dr. William H. Hunter offers advice for the young physicians migrating to his corner of our state. Bill's tenure as SCMA president seems like only yesterday — a yesterday characterized by relative stability of our professional *cosmos*. Growing numbers of physicians and profound changes in the financing of health care delivery now threaten the fabric of our profession. The challenges to organized medicine probably surpass any of the previous challenges of the 20th century.

For the first time in several decades, entering medical practice is no longer easy or straightforward. Since the early 1970's, the debt load for graduating medical students has risen by over 12 percent per year. Between 1974 and 1984, the physician's share of gross practice devoted to expenses increased from 40 percent to 46 percent and professional liability expenses increased 336 percent. Although solo practice has become less popular, finding one's niche within corporate medicine may be increasingly difficult. Not long ago, graduation from a residency program seemed to assure a reasonable measure of success. Today's young physicians often face considerable uncertainty.

Reflecting on these pressures, the AMA's Council on Long-range Planning and Development predicts:

> "Economic pressures are bound to create frictions among physicians. As colleagues become competitors, disputes will inevitably arise over such issues as hospital admitting privileges, the ethics of innovative practice arrangements, and responses to increased professional liability. . . . The status of the medical profession could decline, and *the profession could become a trade.*"[1] (italics mine)

We must remember that, over a century ago, the founding fathers of American organized medicine labored *to elevate* our profession above the status of a trade. If we are *to preserve* this heritage, we must ever keep before us their belief that high ethical principles should apply not only to our dealings with patients but also to our relationships with each other.

— CSB

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PHYSICIANS, SCHEDULE SOME TIME FOR YOUR COUNTRY.

Many physicians would like to devote some time to their country in a local Army Reserve unit. We know that making a weekend commitment can be difficult for most physicians. So it is practical for the Army Reserve units to be flexible about time. It's worth discussing.

Incidentally, in addition to satisfying your own desire to serve your country, there are exceptional opportunities to do something totally different from a day-to-day routine. Opportunities to study new areas of medicine, meet new people in your specialty, and be a part of one of the world's most advanced medical teams.

Discuss the opportunities with our Army Medical Personnel Counselor.

FOR SURGEONS LOOKING FOR A CHALLENGE.

Your challenge could be the Army Reserve unit near you. It's a unit that requires the services of surgeons.

You may wish to explore the challenge of teaching in a major medical center. You may wish to explore the special challenges of your specialty in triage. Certainly you'll be confronted by challenges very different from your daily routine.

You'll also have an opportunity to participate in a number of programs in which you'll be able to exchange views and information with other surgeons from all over the country.

The Army Reserve understands the time demands on a busy physician, so you can count on us to be totally flexible in making time for you to share your specialty with your country. We'll arrange your training program to work with your practice.

To find out about the benefits of serving with a nearby Army Reserve unit, we recommend you call our Army Medical Personnel Counselor.

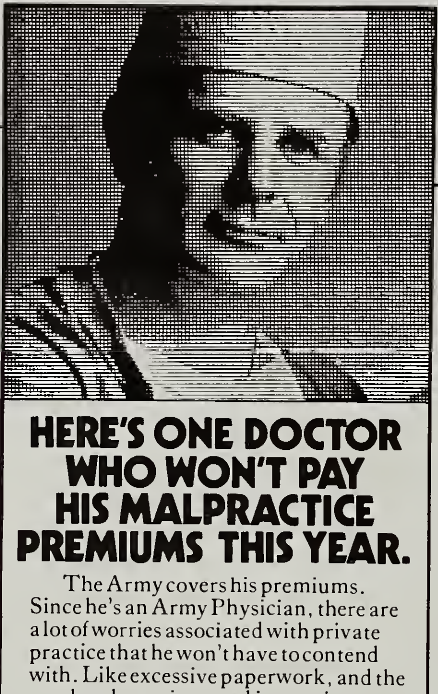
PHYSICIANS, THERE ARE TWO KINDS OF FLEXIBILITY IN THE ARMY RESERVE WE THINK YOU'LL LIKE.

One, time. We know how tough it is for a busy physician to make weekend time commitments. So we offer flexible training programs that allow a physician to share some time with his or her country. We arrange a schedule to suit your requirements.

Two, the opportunity to explore other phases of medicine, to add a different kind of knowledge—the challenge of military health care. It's a flexibility which could prove to be both stimulating and rewarding, with the opportunity to participate in a variety of programs that can put you in contact with medical leaders from all over the country.

See how flexible we can be, call our Army Medical Personnel Counselor.

ARMY RESERVE.
BE ALL YOU CAN BE.



HERE'S ONE DOCTOR WHO WON'T PAY HIS MALPRACTICE PREMIUMS THIS YEAR.

The Army covers his premiums. Since he's an Army Physician, there are a lot of worries associated with private practice that he won't have to contend with. Like excessive paperwork, and the overhead costs incurred in running a private practice.

What he will get is a highly challenging, highly rewarding experience. The Army offers varied assignments, chances to specialize, or further your education, and to work with a team of dedicated health care professionals. Plus a generous benefits package.

If you're interested in practicing high quality health care with a minimum of administrative burdens, examine Army medicine. Talk to your local Army Medical Department Counselor for more information.

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LETTER TO THE EDITOR

To the Editor:

Dr. Walter Roberts, at the request of the Primary Care/Medicaid and Indigent Care Committee, recently mailed a letter to all physicians in South Carolina. We have been amazed at the response to this letter. Physicians all over the state wrote us about problems they were having with indigents and Medicaid recipients. Others told us what they were doing in their communities for indigents. We have been able to help some of these physicians with their problems and have supplied information to others which should help them with indigent care in their communities.

A disturbing trend has been identified from some of these letters. Very few primary care physicians in the metropolitan areas will see Medicaid patients. This results in limited access to medical care for this type of patient. Hospital or health department clinics cannot fill this void. Various excuses are given for not treating Medicaid recipients (i.e., my practice is too big already, Medicaid doesn't pay enough, too much paperwork, undesirable patients, etc.). The fact remains that a segment of our population is underserved. If each primary care physician would see a few of these patients, the problem would be solved. Most of us had some portion of our education supplemented by the State of South Carolina. We can help repay our debt by treating some of these patients.

There are some of you who state that you will see Medicaid patients, but, in fact, do not. One physician informally polled his colleagues on his hospital staff. Later, he called the offices of those who had indicated that they would accept Medicaid patients to make an appointment for one. He was refused by the receptionist in most offices. This leads to the conclusion that either the front offices have not been properly instructed by the physicians in their offices or they were reluctant to admit to a fellow physician that they would not see less fortunate patients. If you are one of these, please re-examine your policies.

The state will experience a serious shortfall of revenue in 1987. Medicaid will be required to take significant cuts in the budget. Physicians will have to absorb some of these cuts. We have been assured that the Health and Human Services Finance Commission will work to restore these funds as soon as possible. This committee pleads with you to help us care for this segment of our population. We, in turn, pledge to try to help improve the Medicaid system and indigent care.

B. E. NICHOLSON, M.D.
409 Simpkins Street
Edgefield, SC 29824

ON THE COVER: LAWRENCE GARVIN CLAYTON, M.D.

The man with deep set eyes staring into the lens of an 1877 camera is Lawrence Garvin Clayton, M.D., of Central, South Carolina. In the photograph on the cover, he is at the University of Virginia with his roommate, Henry H. Atkinson, a law student from Arkansas. Dr. Clayton was to practice medicine in South Carolina for 56 years. The many tales of his life and actions exist to this day. He was a true individual in the best sense of the word.

He was born 18 December 1854, on his family's farm near Sharon Methodist Church. The Pickens-Anderson County line ran through the property, which is still in the family. A few miles down the road in Anderson County was Slabtown and its Thalian Academy, where he learned Greek on dirt floors. The beautiful rolling wooded hills of this area with its many creeks held the summer delights of my own childhood. A few miles up the road is Central, in Pickens County, where Lawrence Clayton spent most of his life. Like many great men, he was the favorite of his mother, Martha Dyar Hendrix, of the Pickens County Hendrixes. According to Faith Clayton, daughter of Doctor Clayton and former Industrial Commissioner of South Carolina, Martha Hendrix put the family crown on Lawrence's head. She was also his professor of mathematics at Thalian Academy. Lawrence learned his first Greek at his mother's knee; she read the *Bible* in original Greek all of her life. The family story on Martha was that she was smart as a whip and mean as a snake. To control Lawrence's father, Lemmuel, a large affable man, this small woman would obtain a handful of his money and sit by the fire threatening to throw it in if he did not come to heel. At such times Lawrence was always sent for because he was the only one who could reason with his mother.

After finishing Thalian Academy with honors, Lawrence Clayton spent two years studying medicine at the University of Virginia. While there, he often took his anatomical specimens back to his room, where he kept various kidneys, brains, hearts and livers outside his window in pans of ice. While northern Virginia winters were not hard on such specimens, the specimens themselves were rather hard on several law students who lived on his hall. This story was told years later by Judge Allan M. Kimbrough of Mississippi, a next-door neighbor of Jefferson Davis: "Several of the law students *en massee* burst into Clayton's room where they demanded that he return these human parts to the graveyard from whence they came and in the future treat the dead with respect. Clayton was heard to mutter, 'Anybody can learn law by sitting around and talking, but to learn medicine you have to do it with the human body.' And with that, he pulled his revolver, cocked it, and gave them one minute to clear out. They left in much less time than that and did not come back." Those were the good ol' days when doctors knew how to treat lawyers.

After leaving the University of Virginia, he spent a year in residency at the University of Maryland and the Baltimore Infirmary. He then returned to South Carolina and practiced medicine in Slabtown for three years. By then he had saved enough money to return to his studies, this time at Jefferson Medical School in Philadelphia for one year. He was always rather proud to have heard Oliver Wendell Holmes lecture while he was there.

When he returned home, he set up his practice in the new town of Central. The railroad had come and Central was the central point between Atlanta and Charlotte. They had a roundhouse and watering tanks for the trains, and there were hotels and boarding houses where passengers could alight and have a leisurely meal. Lawrence Clayton began his practice of medicine from horseback with his instruments in his saddle bag and his quail net over the saddle horn. He would net the birds from his saddle and take them to his patients for whom he prescribed quail broth for the convalescing. (In recent years there has been an excellent article in the *New England Journal of Medicine* concerning the usefulness of such a prescription.)

Dr. Clayton married Martha Adelaid Smith, one of the Anderson County Smiths of the Slabtown area, and they had twelve children. He practiced medicine in Central for 53 years, until 1935 and automobiles — he liked the cars all right, but he missed netting the quails. During his years of practice, he was always known as a superior physician and was highly respected within the profession. He was president of the Pickens County Medical Society for more years than any other physician. He was a general practitioner but a gifted obstetrician as well, and he delivered thousands of babies at home (births all occurred at home in those early days). When other physicians had difficult deliveries, Dr. Clayton was always called in consultation. He was frequently called in by one particularly young doctor who was fond of using pituitrin to speed up deliveries. In hindsight, the way this drug was used in those days was nothing short of criminal. It was in the 1950's before physicians learned how to use this rather dangerous obstetrical medication; afterwards they used it a whole lot less. But repeated warnings to his younger colleague were of no avail. After being called in on a particularly severely lacerated young mother, Dr. Clayton, then in his 60's, got his buggy whip, went to the young doctor's office, and grasped him by the collar. Shaking the whip in his face, he said, "You use that damn drug one more time, and I'll whip you down Main Street right out of town." It made a believer out of the younger doctor, and in his time he too became a fine physician, eventually becoming a fast friend with Dr. Clayton. I well remember in the 1950's when this same "young physician," then in his 70's and still delivering at home, would call me in to help with a delivery, not because of a problem but because he was exhausted; and it was usually after midnight. I learned a lot from him, and I remember particularly these words: "Just be patient, Bill, 99.9 percent of these deliveries come out fine if you give nature its opportunity."

Dr. Lawrence Clayton was indirectly involved in the last two lynchings that occurred in Pickens County. In the 1880's, a young black man was taken into Ramsey's Woods, now part of the Clemson campus, and lynched. On hearing of this Dr. Clayton rode his horse to the scene, cut the victim down, and took him to his office for treatment, where he died during the night. Not long after this, an itinerant white man raped a 13-year-old black girl. The lynch victim was in the hands of a mob of black men when Dr. Clayton rode up and temporarily rescued him. The doctor sent for the police and carried the rapist to his office. Once there, the rapist escaped before his wounds could be treated. However, he did not escape from the blacks who were still looking for him. He was later found dead, hanging from a hickory tree near the overhead bridge. His toes were barely touching the ground, and his penis had been cut off and put in his mouth. It was left to Dr. Clayton to cut him down.

Dr. Clayton spent his life in healing. He never turned down a patient and would go when called, night or day. He was an institution in his community and was the founding father of Central Wesleyan Methodist College. He practiced medicine until he was 80, when, with severe diabetes, he took to his bed only a month before his death. At that time, he wrote to his son, Harold, in South America, who was the W. L. Grace Company's top man there. The dying doctor told his son he would wait for him to get there. Harold got home in time. Dr. Clayton's mind wandered those last few days. He would talk to the phantom of his long dead professor of Greek from the Thalian Academy, John L. Kennedy. In doing so, it is reported that he conjugated his Greek verbs perfectly. The night before he died, he got up and started out. His daughter Faith caught him at the door and asked, "Where are you going, Papa?" He looked at her in puzzlement and then looked out the door — "I'm going to Ramsey's Woods; I mustn't be late."

— William Harvey Hunter, M.D.
Guest Cover Story Editor

This space contributed as a public service.

"YES, THERE IS LIFE AFTER BREAST CANCER. AND THAT'S THE WHOLE POINT."

–Ann Jillian

A lot of women are so afraid of breast cancer they don't want to hear about it.

And that's what frightens me.

Because those women won't practice breast self-examination regularly.

Those women, particularly those over 35, won't ask their doctor about a mammogram.

Yet that's what's required for breast cancer to be detected early. When the cure rate is 90%. And when there's a good chance it won't involve the loss of a breast.

But no matter what it involves, take it from someone who's been through it all.

Life is just too wonderful to give up on. And, as I found out, you don't have to give up on any of it. Not work, not play, not even romance.

Oh, there is one thing, though.

You do have to give up being afraid to take care of yourself.

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THE JOURNAL
OF THE SOUTH CAROLINA MEDICAL ASSOCIATION
VOLUME 83 APRIL 1987 NUMBER 4

ONE HUNDRED THIRTY-NINTH ANNUAL MEETING

THE OMNI HOTEL AT CHARLESTON PLACE
CHARLESTON, SOUTH CAROLINA
APRIL 29-MAY 3, 1987

The 139th Annual Meeting of the South Carolina Medical Association celebrates seven consecutive years in Charleston, and in 1987, the meeting moves to a new location at the Omni Hotel at Charleston Place.

Details of the meeting have been mailed to all physicians in the state and a record attendance is expected. If you have not received information including pre-registration forms and hotel reservation cards, call the Headquarters office at 798-6207 or use the form on the following page to register. For SCMA members, again this year there is no registration fee. On-site registration will utilize computers and word processors, but pre-registration is encouraged to avoid delays.

The House of Delegates meets in full sessions on Thursday morning, April 30, and Sunday morning, May 3. Speaker of the House, *O. Marion Burton, M.D.*, will preside with the assistance of Vice Speaker, *Benjamin E. Nicholson, M.D.* Reference Committee meetings are scheduled for Thursday afternoon.

A full schedule of scientific sessions on many topics of interest has been planned, beginning with workshops on Wednesday afternoon and each afternoon thereafter through Saturday. General sessions are scheduled for Friday and Saturday mornings on the major topics of AIDS and "Geriatrics." The popular Sports Medicine workshop will be held on Thursday afternoon, and a symposium on Stroke Problems is planned for Friday afternoon. Consult the Schedule of Events which follows for details on all programs. *As an organization accredited by the ACCME for continuing education, the South Carolina Medical Association certifies that the continuing medical education activities at the Annual Meeting meet the criteria for hour for hour credit in Category 1 of the Physician's Recognition Award of the American Medical Association. AAFP prescribed credits have also been applied for.*

Special guests for this annual meeting include *William S. Hotchkiss, M.D.*, President-Elect of the American Medical Association, and *John Watson, M.D.*, President of the Medical Association of Georgia.

The first Leonard W. Douglas, M.D. Memorial Lecture, established by the S. C. Institute of Medical Education and Research, will feature as guest speaker *Congresswoman Elizabeth Patterson* from Spartanburg. She will speak at the General Membership meeting on Thursday morning.

The SCMA Auxiliary will hold its Annual Meeting concurrently with the SCMA, and in addition to the meeting of the Auxiliary House of Delegates, many special activities have been planned. Again this year, Mead Johnson Nutritional Division has organized and will provide the prizes for a golf tournament on Friday afternoon. Several specialty societies will be holding meetings, as well as the S. C. Division of the American Diabetes Association.

The SCMA Board of Trustees will meet on Wednesday, April 29, and at breakfast each day to consider business which arises during the House of Delegates meeting.

This issue of *The Journal* contains those reports, Resolutions and other information available at publication deadline. Additional reports received after this issue has gone to press will be included in the Delegates Handbooks which will be mailed prior to the meeting. Delegates are asked to bring their handbooks to the meeting or to pass them along to Alternate Delegates if they are unable to attend.

— JD

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OFFICER REPORTS

CHAIRMAN OF THE BOARD OF TRUSTEES

Thank you, Mr. Speaker. Members of the House of Delegates, officers and members of SCMA and guests. It is a pleasure for me to present this report as Chairman of the Board of Trustees of SCMA.The past year has been an extremely busy year for the Board of Trustees. Either the Board of Trustees or the Executive Committee has met every month over the past year. We had one weekend meeting and one called board meeting in February. Your board is only as strong as the representatives you elect. I am happy to report that you have elected an excellent board. We have a mixture of seasoned and experienced leaders and young and promising physicians. The board members take a minimum of six days out of their practice a year to represent you and I think they should be commended for their time and effort.

The Board of Trustees frequently refers difficult matters to appropriate committees when there are items on which the board needs their expertise to help make the appropriate decision. I would like to personally thank the committee chairmen and the committees for their help this year. Also, I would like to thank Bill Mahon and our staff for a job well done.

At our meetings, we have a number of regular invitees including the President of the Auxiliary, Deans of two medical schools, Commissioner of DHEC, President of the State Board of Medical Examiners, President of the House Staff Section, President of the Hospital Association and the Executive Director of the Health and Human Services Commission.

We have been interested in DHEC Board meetings and the agendas for their meetings are distributed to our board members. Those members interested may attend the DHEC meetings.

The board continues to receive the minutes of SCMA committee meetings and review them on a regular basis.

The Board of Trustees has met jointly with representatives from the AARP, South Carolina Federation of Older Americans, and S. C. Commission on Aging. We had a constructive meeting and opened the door for future meetings to deal with the health problems of the elderly. We have also met with representatives from the S. C. Consortium of Community Teaching Hospitals and were informed about a retreat for residents in the state to meet with S. C. physicians who were interested in finding partners. The SCMA sends physician applicants for job opportunities in South Carolina to the Consortium as well as to DHEC.

As you are aware, the South Carolina Medical Care Foundation submitted a proposal for the PRO contract which was ultimately awarded to Metrolina of Charlotte. HCFA has changed the rules and as of this writing we have not been able to get a copy of the contract with Metrolina. We are accumulating complaints from you about the PRO and will work diligently to change and improve the present situation.

On tort reform, our effort last year was unsuccessful, but we made many friends in the House and Senate. We have now joined in the S. C. Civil Justice Coalition with 42 other organizations. We are determined to get meaningful tort reform this year. Tort reform will be presented in more detail in your handbook.

The SCMA Auxiliary continues to be a vital force of our organization. Dr. Susanne Black, Auxiliary President, has joined us at our board meetings and I would like to thank her and the Auxiliary for their continued support.

Our second annual Leadership Conference was a tremendous success. We had approximately 100 attendees. We were privileged to have South Carolina's two Gubernatorial candidates, Carroll Campbell and Mike Daniel, speak on issues of tort reform and hazardous waste in our state. I am sure you will want to mark your calendar and attend our 1987 leadership conference, Wednesday, September 16, 1987.

The Board of Trustees had a called meeting in February to meet with representatives from Wisconsin Physicians Services. The purpose of this meeting was to consider a pilot program for North and South Carolina to participate in the CHAMPUS Reform Initiative. After further study, we decided not to bid on the contract, but we will monitor the CRI closely and keep you informed.

The Board unanimously passed a resolution to name the SCMA headquarters building the Dr. C. Tucker Weston Building. A plaque has been placed in the building citing the efforts of Dr. Weston to obtain a permanent home for the SCMA.

The board has met quarterly with the South Carolina Hospital Association to discuss common goals and problems. We met with representatives from the nurses; Department of Mental Health; GSX in Pinewood; Sumter County; S. C. Civil Justice Coalition Chairman; American Red Cross; Council on Maternal, Infant and Child Health; and SCMA Young Physicians Section, discussing items of mutual concern. We had a legislative reception in Columbia and invited the membership to attend. We feel this has strengthened our relationship with the legislature.

SCMA sent a resolution to the AMA last year to restructure the Medicare Law. The AMA now has a viable proposal to present to Congress. We will work vigorously through our state's delegation and the AMA to improve the Medicare situation. There are many organizations and agencies trying to change the private practice of medicine. It is imperative that we remain strong to fight these elements. It is extremely important that all physicians join the SCMA and the AMA to help us achieve this goal. As long as we remain dedicated to providing a high quality of medicine and place our patients first, we will succeed.

Again, let me thank you for the opportunity to serve as Chairman of the Board of SCMA.

Respectfully submitted,
Daniel W. Brake, M.D.,
Chairman of the Board

THE SECRETARY

I am pleased to report that membership in SCMA, AMA and SOCPAC increased again in 1986. Total SCMA membership in 1986, including honorary, interns/residents and students was 3,260, a gain of 115 members over the previous year. During 1986, the SCMA expanded our membership services to include disability insurance, which has been well-received by members. SCMA also continued to serve its members through dialogue with state agencies and the Governor's office and legislatively through action on such proposed changes in the Nurse Practice Act, access to state mental health facilities, tort reform, HMOs, and hospital admitting privileges for chiropractors.

Membership thus far in 1987 continues this successful trend with 197 active members ahead of our pace at this time last year.

Plans for membership services in the upcoming year include preparation of a "Physician's Handbook on South Carolina Law," assistance on Medicare MAAC's, Medicaid cutbacks, and increased public visibility through media contacts. Of special note is the formation of a Hospital Medical Staff Section of the SCMA to assist our members in this increasingly complex area of service in hospitals and work towards the creation of a Young Physicians Section.

Much of the above statewide work has been enhanced by the assistance of the AMA. AMA has also actively served physicians on a national level through its contacts with DHHS about problems in the PRO program, seeking congressional support against the RAP proposal, and filing suit in federal court when necessary such as in the case of OBRA and the resulting participating/non-participating and MAAC policies.

The above discussion is the good news. The bad news is that there remains a significant percentage of physicians in the state who do not join SCMA. It behooves each of us to make the effort to recruit a new member, by assuring our county societies present information about SCMA and AMA activities, by speaking up in the lounge at the hospital regarding the services of these organizations and by personally contacting our friends and colleagues to assure they are members.

Please let the SCMA staff or myself know of the ways we can better serve you.

Respectfully submitted,
John W. Simmons, M.D.,
Secretary

THE TREASURER

As I complete my final year as Treasurer of the South Carolina Medical Association, I would like to present a short report about the SCMA's financial condition. A more comprehensive report will be presented to the 1987 House of Delegates in Charleston.

For the year ended June 30, 1986, the SCMA had net revenues over expenses including depreciation of $107,922. However, if you exclude depreciation expense of $10,699, the SCMA had net operating revenues over expenses of $118,691. The SCMA had a Fund Balance of $1,580,791 as of June 30, 1986.

The SCMA's current financial condition for the eight months ended February 1987 projects a positive financial position. At the end of February, the SCMA had earned net revenues over expenses of $72,942. We currently project that the SCMA will have net revenues over expenses of $85,000 for this fiscal year.

The investment policies of the SCMA and its affiliates have continued in a similar manner, as in past years, with diversified investments in federal treasury and agency notes and money market funds. As of June 30, 1986, the SCMA's permanent and operating reserves had balances of $691,910 and $331,670 respectively. The Board of Trustees in their February, 1987 meeting voted to discontinue the policy of allocating 6 percent of the budget annually to the permanent reserve. The Board agreed to having total reserves equal one year's operating budget and any excess should be allocated to cover future operational deficits. Therefore, the permanent and operating reserves will remain constant for the year ending June 30, 1987.

For 1988, we have not projected a membership dues increase. This will mean that we have not had an increase since 1977 which to me is an outstanding accomplishment particularly when you consider the increase in the cost of living during this time period. Our society has performed so well financially that we maintain this sound financial position in spite of remaining in the lowest 10 percent of state associations as far as annual dues are concerned. I know of no professional organization that is operating on any more of a sound financial basis. I thank the membership for the privilege of having served as your treasurer for these past three years and wish for the association continued financial success.

Respectfully submitted,
Thomas C. Rowland, Jr., M.D.,
Treasurer

THE SPEAKER OF THE HOUSE

I want to begin my comments with a very special salute to our delegation to the American Medical Association. I was privileged to attend the AMA House of Delegates in June, 1986. Dr. John Hawk, delegation chairman, convened our group at 7:00 a.m. each day to review all resolutions and issues to come before reference committees and the house. Particular attention was given to items that would affect South Carolina patients and physicians. Appropriate courses of action were planned and implemented on these matters. Each member of our delegation would then proceed to his assignment. He would monitor the progress of those matters assigned him by Dr. Hawk. During evening sessions, our SCMA delegation would review actions of reference committees and the house in order to judge their impact on medicine in South Carolina. From early morning to late at night, our representatives insured that our interests were carefully guarded.

Although there was little time for rest and *none* for recreation, it was an exciting few days. This was democracy in organized medicine at its best. Our delegates and alternates are highly regarded by those of other states. This enables "Dr. Hawk and company" to influence voting on matters that affect you and me. At any time you have opportunity, *thank the members of our delegation for what they are doing for us*. It is no easy task.

The 139th Annual Meeting and Scientific Assembly of SCMA will be held April 29 through May 3, 1987, in the Omni Hotel at Charleston Place. This charming setting will add to the excitement of the scientific sessions and social events. Dr. O'Neill Barrett has an outstanding array of academic and clinical talent assembled to update us on various aspects of medicine. Congresswoman Liz Patterson will give our first Leonard Douglas Memorial Lecture at the Thursday morning house of delegates. We will be privileged to have Dr. William Hotchkiss, President-Elect of the American Medical Association and Dr. John Watson, President of the Medical Association of Georgia, as our special guests. A unique financial planning seminar should be of interest to many of you. Please make your plans to share all this and more with us in Charleston.

Your board of trustees, officers and staff have worked throughout the year to implement those resolutions and recommendations adopted by the house of delegates at its 1986 meeting. As recommended by this body, Melanie McLendon has joined your staff as director of communications/public relations. The board of trustees has allocated funding and directed the production of a tape regarding sexual abuse of South Carolina children. It should soon be ready for distribution to the solicitors of each county. County society presidents have been informed of physicians in their area who are not members of the SCMA. The board of trustees and staff have reaffirmed their commitment to meaningful tort reform in our state and, as a consequence, have joined and are actively participating in the coalition for civil justice in South Carolina. There is much optimism that some meaningful tort reform will be accomplished this year. Your officers and staff have worked with our new governor and the new administration of DHEC to help find a solution to the continued influx and storage of toxic waste in our state. We will continue doing everything in our power to influence those who can make meaningful decisions in this regard. There were several resolutions regarding the monopolistic behavior and potential conflict of interest by Blue Cross/Blue Shield activities. The South Carolina Hospital Association was concerned that our resolution had potential antitrust implications for their association and attempts to solicit their help have not been fruitful.

Finally, we owe a debt of gratitude to our Executive Vice President, Bill Mahon and a staff that serves us so well. Day in and day out, through many difficult negotiations, plans, and activities, these men and women are guarding our interests. When you see them, *don't forget to thank them* for all they do for us.

Respectfully submitted,
Marion Burton, M.D.,
Speaker of the House

TRUSTEE REPORTS

FIRST MEDICAL DISTRICT (METROPOLITAN)

I am completing my first two-year term as Trustee from the First District, and in addition, I have served on the Executive Committee during the past year as the Member-at-Large of the Board. As I look back at my report from last year, the major issues facing South Carolina physicians have not changed very much. Our initial tort reform effort was unsuccessful, and this year we are part of the South Carolina Civil Justice Coalition, with essentially the same goals as last year. We physicians are keeping a low profile on this tort reform effort, and it remains to be seen how successful it will be.

Last year, one of our main concerns was the Blue Cross/Blue Shield PPO, but it has run into financial problems and seems unlikely to be the major threat we had anticipated. This year our major problems are with Medicare: the new regulations for fees under OBRA and the South Carolina PRO review and denial of reimbursement for hospitalizations. The complex formula for MAAC was designed to coerce us into becoming "participating physicians." The South Carolina PRO seems determined to deny hospitalization for Medicare patients if at all possible. I am not sure that anyone knows what will be the major insurance, reimbursement, or regulatory problem during the coming year, but I think it is imperative that we work together through organized medicine. For that reason, I encourage you to be active in the SCMA and AMA.

The AMA and SCMA have started a Young Physicians Section, for all physicians who are under forty or who have entered practice within the past five years. If you meet the criteria, I encourage you to participate actively. The AMA has had a Hospital Medical Staff Section for several years, and we are starting a section at the SCMA Annual Meeting this year. We physicians need to be allied with our hospitals, and not against them, in these major reimbursement battles with the government and insurance companies. If we are not united, then we will all lose, including our patients.

This year the Board of Trustees decided to assign one of its members to each SCMA committee in order to ensure better communication. I have been appointed to the Committee on Alcohol, Drug Abuse and Impaired Physicians, an interesting assignment since my wife Fran is on the Charleston County Substance Abuse Commission. The hard working physicians on this committee are dedicated to rehabilitating the impaired physician and deserve your support.

I appreciate the opportunity of serving this year as Trustee, and I welcome any ideas that you may have about the role of SCMA.

Respectfully submitted,
J. Chris Hawk, III, M.D., Trustee

FIRST MEDICAL DISTRICT

It has been an honor for me to serve as your representative to the Board of Trustees from the First District. At the reorganization meeting of the Board of Trustees in April, I was honored by being elected Chairman of the Board.

I have attended all Board and Executive Committee meetings for the year as well as the Leadership Conference for SCMA and AMA and the AMA Interim meeting. I have tried to visit all the counties in my district this year. Dorchester County reorganized itself last year and has continued to remain active. We had a productive meeting in February when President, Walt Roberts, and Bill Mahon visited with us. We are trying to reorganize Beaufort County as it has been inactive in the past. Dr. Roberts, Bill Mahon and I met with them in March and we are hopeful that the physicians in that area will take an interest in the county medical society as well as the SCMA and AMA.

We still have a number of physicians in our district that have not joined the SCMA, but as they continue to be confronted with problems with

PRO, Medicare, malpractice, etc., I feel sure they will eventually join.

Thank you again for allowing me to serve as your representative to the Board.

Respectfully submitted,
Daniel W. Brake, M.D., Trustee

SECOND MEDICAL DISTRICT (METROPOLITAN)

My first year as Trustee from the Second District has been quite busy and educational. I have observed and participated in the democratic process which governs our association. A reasonable amount of time this past year was spent in learning how our association functions, meeting and working with Trustees from around the state and working with the excellent staff at the SCMA.

In addition to attendance at regular and special board meetings, I have represented the SCMA Board at several committee meetings. I have served as the SCMA Liaison Physician to the South Carolina Hospital Association SCPRO Relations Advisory Committee and have attended its regularly scheduled meetings. I represented our district at the local press conference announcing the formation of the South Carolina Civil Justice Coalition. I have met with both our state and national legislative representatives in an effort to help protect the interests of our patients and our profession.

Many events have transpired this past year which will have significant direct or indirect impact on our practice of medicine. The losses experienced by both Companion Health Care and Physicians Health Plan in this state as well as similar experiences by a number of HMO's throughout the nation have forced a re-evaluation of the concept, structure, operation, and management of this vehicle for health care delivery. Our tort reform initiative was unsuccessful with regard to legislative change. This effort was productive in a number of other respects and lessons learned should prove invaluable in the continuing quest to achieve meaningful tort reform. The SCMA has also gained statewide respect for the effectiveness of its legislative efforts and the knowledge and dedication of Susie Nichols, our lobbyist.

Walt Roberts has set a difficult standard to match in the seemingly inexhaustible time and energy which he has expended over the past year in effectively representing the South Carolina Medical Association and the best interests of our patients. Bill Mahon continues to expend the energy which has helped place our organization among the most effective and efficient within the country. Charlie Bryan and his staff continue to publish a state medical journal of enviable quality. The SCMA is fiscally sound and continues to increase its membership as additional physicians understand the importance and effectiveness of this organization.

I feel that having this first "initiation" year behind me, I can begin to more effectively represent my district on a statewide level and I will strive to communicate all board activities to the physicians whom I feel privileged to represent.

Respectfully submitted,
Edward W. Catalano, M.D., Trustee

THIRD MEDICAL DISTRICT

Your Third District Trustee has been really busy this year with a variety of meetings. I have attended all Board of Trustee meetings, including a called meeting for February 11, 1987, and a special retreat at Hilton Head in September. At the retreat, discussions were carried on with members of the AARP in an attempt to try and gain some understanding of the problems in dealing with the Medicare carriers.

I attended the Laurens County Medical Society meeting along with Dr. Roberts, SCMA President, and Bill Mahon, Executive Vice President. I also attended a similar meeting of the Newberry County Medical Society. I have been in touch with our colleagues in Abbeville.

It has been a pleasure serving the Third District in this capacity and I look forward to further service.

Respectfully submitted,
Richard M. Carter, M.D., Trustee

FOURTH MEDICAL DISTRICT

Your trustee participated in all Board meetings and activities except for the November 19 meeting when he was hospitalized with nephrolithiasis.

A joint meeting of Oconee and Pickens County Medical Societies was arranged for our President to visit at Clemson and this was well attended. The Anderson County Medical Society has meetings at Anderson Memorial Hospital and I attended there on two occasions, the last one at which our President-Elect, Dr. Charles Duncan, spoke regarding issues with which the SCMA is concerned.

As usual, I participated in the Doctor of the Day program at the State House and would recommend it to our members as an excellent way to gain knowledge and insight into the legislative activities in our state. I continue to serve on the Legislative Activities Committee which reviews legislation being proposed and helps the Board in deciding whether to oppose or support legislation.

Respectfully submitted,
William J. Goudelock, M.D., Trustee

FOURTH MEDICAL DISTRICT (METROPOLITAN)

My first year serving as a Trustee on the South Carolina Medical Association Board of Trustees has been interesting and informative. I have found myself buoyed in spirit and determination by the example in friendship of the fellow physicians that I have come to know throughout South Carolina.

This is not to say that this year has been without difficulty, however. As a group, the physicians of the South Carolina Medical Association are facing many complex, and not easily solved problems. Tort reform, toxic waste, HMOs, allocation of our limited financial resources, and treatment for our elderly and indigent, are examples. These and other important issues have been discussed at the SCMA Board and committee meetings between representatives of the South Carolina Health Department, county medical societies, and the Association of Retired Persons.

Tort reform rightly remains the overriding issue for medicine and society. Regarding legal issues, word has recently been received by the Greenville Medical Society that the litigation filed against it has been dismissed by the presiding judge. It is uncertain as to whether the plaintiff will appeal this decision.

We must keep in mind that all men who live in any group or association are political beings. Political policy is often determined by those who are most determined in their point of view. The political process is much like an obese patient dieting to lose weight, but not recognizing that to maintain their weight loss, changes in their lifestyle must be accomplished. We must recognize that the political process is an ongoing one, and that we will see many ebbs and flows in our lifetimes.

I have been impressed with the professionalism of the SCMA staff, as well as with the tremendous numbers of voluntary hours given by physicians across the state for the SCMA. SCMA's position to influence the medical climate in our state can be increased by increasing the percentage of physicians who are members of the SCMA. I believe this can best be done by word of mouth and personal recruitment on the part of each of us.

I look forward to my second year of my first term, and eagerly anticipate what the future holds for medicine.

Respectfully submitted,
James B. Page, M.D., Trustee

FIFTH MEDICAL DISTRICT

Another year has passed, and I again want to thank the members of this district for allowing me to serve as Trustee. It has been educational and rewarding to work within a group of such fine physicians.

This year we are again in the midst of sponsoring legislation dealing with malpractice. Whereas last year the SCMA was alone in advocating such legislation in the second year of a two-year session, this year we have the advantage of being a leader in a large coalition endorsing such legislation in the first year of a two-year session. I think we are all optimistic that our goals can be accomplished. Although it would appear at first glance that last year was a futile effort, indeed we accomplished much in terms of education and groundwork.

In September of last year, the Board of Trustees held a retreat for a weekend. Insight was gained in two primary areas. We met with several representatives in regard to the AARP and Council on Aging to discuss problems with both medical care and reimbursement of the aging population. Hopefully, now that dialogue has been established, we can move forward in jointly working on some of these problems. The second issue discussed involves the disposal of hazardous materials. As you may be aware, the last two sessions of the SCMA House of Delegates have called for the closing of the hazardous waste GSX facility at Pinewood. After hearing many voices on this issue, the Board still does not know how to proceed in such a complex, multifaceted problem.

The membership of the SCMA continues to increase and I detect more interest, at least within this district, of the members in the medical affairs at the state level. This is very encouraging to me, as I certainly think we all need to work together.

One of our most recent areas of endeavor relates to the Department of Defense initiative to award contracts for CHAMPUS beneficiaries. The Board, on behalf of the SCMA, is investigating the possibility of networking a group of physicians throughout the state, possibly as a PPO or HMO, to supply such services. By the time this report is published and certainly by the Annual Meeting, more details should be available.

I would like to personally thank Walt Roberts and the other leaders of the Medical Association for the endless hours of time spent dealing with issues of interest and benefit to the physicians of the state. I think that Bill Mahon and the staff at SCMA Headquarters also do an admirable job. I appreciate the opportunity of serving this district and the physicians of this state.

Respectfully submitted,
Terry Dodge, M.D., Trustee

SIXTH MEDICAL DISTRICT

This has been my first year as the Trustee from the Sixth District and this year has really been a learning experience for me. I must say that I have developed an even deeper respect and admiration for the leadership and staff of the SCMA. The amount of work and dedication of these men and women is impressive, indeed.

This year the board has dealt with three main areas. Tort reform, toxic waste and the alternative medical care delivery and payment systems have occupied a great deal of our time.

The SCMA continues to spearhead and remain the primary impetus for tort reform through the South Carolina Civil Justice Coalition.

We have met with representatives from GSX and DHEC concerning the landfill at Pinewood. The SCMA has been offered as an objective group to study this situation and to help seek a permanent solution to this potentially dangerous activity of burying toxic waste.

As most of you know, South Carolina and North Carolina together are participating in the CHAMPUS Reform Initiative. The SCMA is diligently working on a proposal for this CHAMPUS reimbursement change. More will be heard about this at the annual meeting. We are continuing to monitor the HMO and PPO activity in our state.

In addition to attending the board meetings this year, I was privileged to be appointed as the Alternate Delegate to the newly formed Young Physicians Section of the American Medical Association. I attended the AMA Interim Meeting and the inaugural meeting of the Young Physicians Section in Las Vegas in December. As a result of this meeting, we are planning to institute a Young Physicians Section of the South Carolina Medical Association and more information on this will be forthcoming.

I believe that the SCMA has gained some credibility with the legislature through our tort reform efforts of last year and I believe our new governor will be receptive to our input. We continue to need contact between our members and their respective legislators, however, to make our needs and ideas known to our state government.

The SCMA exists for service to our members and to protect the quality of care of our patients. Our association is the major body to represent our concerns on a statewide level. As a member of the board, I covet your support, input and prayers as I represent the Sixth District.

Respectfully submitted,
James M. Lindsey, Jr., M.D., Trustee

EIGHTH MEDICAL DISTRICT

Following my re-election as Trustee for the Eighth District at the state medical meeting in 1986, I entered my second full term as a Trustee.

At the reorganizational meeting of the Board, I was honored by being elected Vice-Chairman. I also have been appointed to serve on the Committee to Plan State Meetings. I continue to serve on the Board of Directors of the SCMA Members' Insurance Trust as well as liaison Trustee to the Perinatal and Maternal Health Committee of the SCMA.

I have attended all meetings of the SCMA MIT and all but one of the Board of Trustees and Perinatal and Maternal Health Committee meetings.

I have again offered to visit all component county society meetings and have attended all of the larger (Edisto-Orangeburg) meetings.

Members of the Edisto-Orangeburg Medical Society were honored to entertain Dr. and Mrs. Walt Roberts and Mrs. Barbara Whittaker at our September, 1986 meeting. Dr. Roberts was our guest speaker.

My project for the coming year will be to increase membership in the SCMA from the Eighth District component county societies.

I have enjoyed serving as Trustee from the Eighth District and pledge to continue representing the Eighth District and the interest of my fellow members at the Trustee meetings in the future.

Respectfully submitted,
John W. Rheney, Jr., M.D., Trustee

NINTH MEDICAL DISTRICT

This will be my last report as Trustee of the Ninth Medical District. I am completing my third consecutive term as Trustee and I am not eligible for re-election.

My association with the SCMA goes back to 1977 when I was elected President of the Spartanburg County Medical Society. Subsequently I was elected to two terms as Second Vice President of the SCMA (under the old constitutional setup) and then was elected to three terms as Councilor and Trustee. I am deeply appreciative to the members of the Cherokee, Union and Spartanburg societies who have given me such excellent support during these years. During this span of time the Spartanburg County Medical Society has had over 80 percent of its members to join the SCMA and the Cherokee and Union county support has been consistently over 50 percent.

The Ninth Medical District has always provided excellent leadership for the SCMA. Dr. George Dean Johnson, Dr. Lesesne Smith, and Dr. Euta Colvin from Spartanburg and Dr. Harold Hope from Union have served distinguished terms as President of the SCMA. Dr. John Fleming, who just recently died, was a long-time Councilor of the SCMA and founded the first state aid cancer clinic in South Carolina. Dr. John Simmons of Spartanburg has served as Vice President and Secretary of the organization. Dr. Frank Weir and Dr. Jack Evans from Spartanburg are currently serving terms on the medical disciplinary commission.

One of my first responsibilities as an officer of the SCMA was to head a *Task Force on Nurses and Other Non-M.D. Health Professionals.* Many of the concerns that we addressed in 1977 are just as pertinent today as we struggle with the many encroachments upon the traditional M.D. role in providing the best medical care for the population that we serve.

My involvement with the state medical journal as a board member and my association with Euta Colvin on the SCIMER Board have been particularly enjoyable.

As I leave the SCMA Board of Trustees, I carry with me many pleasant memories, can see that much was accomplished, and worry about many things that still need to be done.

In our great concern for urgent tort reform legislation and the need for effective lobbying efforts for our many problems, I hope that we do not forget that we, as physicians, are still responsible for the best of medical care for our constituents. And superior medical care goes hand in hand with an excellent continuing medical education program for our doctors. I am quite concerned that our state CME program has been given a probationary status by the accreditors of CME programs (with multiple deficiencies and problems cited). I hope that these deficiencies will be corrected with great haste.

Improved relations with the component medical societies of the SCMA must also hold top priority. When our state leaders hold press conferences and other meetings within a local area, the president of the local societies and the trustee from these areas should be included. I further feel that specific invitations to County Society Presidents to attend SCMA Trustee meetings should be issued at regular intervals. During my term as Trustee the head of DHEC and other state agencies were routinely invited to Trustee meetings, but rarely did we have County Society Presidents invited or in attendance to witness the functioning of our state society.

Our County Medical Society officials also need to have ready access to SCMA position papers on important issues before the public. Several years back the SCMA provided such a service with printouts on the SCMA position readily available. This has not been the case of late and I strongly urge that this service to our component societies be reactivated.

Finally, I urge continuing interest and involvement of our SCMA members in the workings of our state organization. Approximately 28 percent of SCMA members are under the age of 40 and I strongly support the organization of a South Carolina Young Physicians Section to the SCMA. I further urge our component societies to seek outstanding physicians in their communities to run for state SCMA positions. We must continue to see that the SCMA is truly representative of all the areas in the state and does not become beholden to any one area or faction of physicians in the state. There are many problems ahead for us as physicians. Strong leadership by the SCMA is a must.

Finally, on a more personal note, I want to thank the members of the Ninth Medical District who have allowed me to serve. I hope that they feel that I have done my best. I am deeply appreciative.

Respectfully submitted,
J. Sidney Fulmer, M.D., Trustee

REPORT OF SCMA DELEGATION TO THE AMA

The activities of the SCMA Delegation at the Annual and Interim Meetings of the AMA have been reported in the August and February issues of *The Journal*. Because the deadline dates for submission of material for the next issues of *The Journal* after each meeting occur before the Delegation returns to South Carolina, it has not been possible to give as timely a report as we would like. However, we are now looking toward having the Delegation Report placed as a special insert with a later deadline date so as to appear in the very next issue of *The Journal* after each AMA House of Delegates Meeting.

We are pleased that the South Carolina Hospital Medical Staff Section is well on the way to successful organization and look forward to similar organization of a Young Physicians Section in the future. In addition, the increasing activity of medical students, including the planned Regional Leadership Conference scheduled for September 26, 1987 in Columbia, is most gratifying.

For the second time in over 25 years, I will not be attending the Annual Meeting of the SCMA. Both times have been occasions by Scientific Meetings out of the United States. This time I will be in London for the joint meeting of the Society of Surgical Oncology, and the Society of Head and Neck Surgeons (I am a member of both) with the corresponding societies of Great Britain. I apologize for my absence and have asked Dr. Randolph Smoak, Vice Chairman of the Delegation, to give a brief verbal report to the House of Delegates.

The SCMA Delegation to the AMA has been expanded in recent years not only by the addition of a third Delegate and Alternate Delegate but also by the regular attendance of designated officers of the Association. At the present time, the Delegation is in the process of formalizing a written "Operating Procedures" which we hope will make the Delegation even more effective in giving the SCMA the best possible representation at the AMA House of Delegates.

I recently returned from the AMA Leadership Conference held in Chicago in February. I have had occasion to talk to a number of County Medical Society officers for whom this was the first AMA sponsored meeting ever attended. Invariably they have expressed admiration for the high quality of the meeting, and appreciation for what the AMA is doing for all the physicians of America. Again we urge you to join the AMA — the AMA needs your membership and *you* (and every other physician) need the AMA! If you are not already a member, please join today.

On behalf of each member of the Delegation, let me state that we appreciate the opportunity to represent the SCMA at the AMA, recognize the responsibility this entails, and pledge that we will do our utmost to further the aims and desires of the SCMA and its members to the best of our ability. Again we solicit the input and advice of every member of the Association, urge your participation in the meetings of the various sections, remind you that you can "speak your piece" at the Reference Committee Hearings of the House of Delegates and invite you to join any and all meetings of *your* Delegation.

The 1987 Annual Meeting of the AMA will be at the Chicago Hilton, June 21-25 and the 1987 Interim Meeting will be at the Marriott Marquis in Atlanta, Georgia, December 6-9. We hope to see many of you at both meetings.

John C. Hawk, Jr., M.D.
Chairman of the Delegation

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COMMITTEE REPORTS

REPORT OF THE EDITOR OF *THE JOURNAL*

One of the oldest periodicals of its kind, *The Journal* was founded in 1905 primarily to provide a forum for the practicing physicians of South Carolina. Striving to maintain this purpose, we especially encourage submission from this group of potential authors. The impressive quality of papers eligible for this year's Thomas A. and Shirley W. Roe Foundation Award suggests that this policy has been at least partially successful.

Priorities for publication are stated in our Information for Authors. We believe that *The Journal* is also an appropriate forum for timely review articles by institution-based physicians and for papers dealing with health care issues especially relevant to South Carolinians. In these times of rapid change, there is also a need for articles devoted to socioeconomic and ethical issues. Currently receiving relatively few manuscripts of the latter category, we encourage such submissions.

I would like to thank the members of the Editorial Board for their advice and support, and would especially like to thank Dr. Thomas Leland for the excellent historical perspectives provided in his cover stories. I would again like to thank Joy Drennen of the SCMA staff for her able supervision of all aspects of our periodical. Single-handedly (and amidst her other duties), she carries out activities for which many competing journals hire at least several persons. Finally, I would like to thank the SCMA membership for the privilege of serving.

Charles S. Bryan, M.D., Editor

COMMITTEE ON AGING

This Committee has not been active or met since the last annual meeting of SCMA. However, it will have a meeting at the SCMA Annual Meeting in Charleston on Wednesday, April 29, 1987, at 5:30-7:00 p.m. in the Hampton Room at the Omni Hotel at Charleston Place.

Your Chairman has been active in Geriatric/Gerontology at the local, county and national level. Furthermore, I am coordinator of the one month rotation of Geriatric Training which is required during the Family Medicine Residents' PGY-3 year in the Family Medicine Residency Program at Spartanburg Regional Medical Center (formerly Spartanburg General Hospital). The American Board of Family Practice and the Residency Review Committee of the AAFP and AAMC have suggested that geriatrics be a required formal period of training during the three years of training in Family Medicine Residency programs.

The SCMA Committee on Aging plans to meet at regular intervals during the 1987-88 year. Any board member of the SCMA who has an active interest in geriatrics, or has problems which should come before our committee, is requested to submit these in writing to the chairman.

Respectfully submitted,
David K. Stokes, M.D., Chairman

ALTERNATE DELIVERY SYSTEMS COMMITTEE

The Alternate Delivery Systems Committee met twice during 1986, in July and September. Our committee continues to serve as liaison between the South Carolina Medical Association, the insurance commission and physician sponsored HMOs in South Carolina. Our two meetings this year were centered around reports from the insurance commission and the Physicians' Health Plan in Columbia, Health Source of South Carolina in Charleston, and Patient's Choice in Greenville regarding mutual problems and discussions throughout the year.

Respectfully submitted,
H. Earle Russell, Jr., M.D., Chairman

ALCOHOL, DRUG ABUSE AND IMPAIRED PHYSICIANS COMMITTEE

The Alcohol, Drug Abuse and Impaired Physicians Committee continues to offer help to fellow physicians who are in trouble with alcohol, drugs and other impairment.

Six members of the Committee attended the meeting of the American Medical Society on Alcoholism and Other Drug Dependencies in Atlanta. Those who attended thought the meeting was informative and productive. Four members from the Committee have been certified by the AMSAODD, and are identified by that Society as knowledgeable and expert in chemical dependence. They will be presented certificates during the Society's annual meeting and Scientific Conference in April.

The Committee is still working with the Impaired Veterinarians' and Impaired Nurses' Associations on their impairment programs. During 1986, the Committee established dialogue with the Impaired Dentists' and Impaired Pharmacists' Associations to work with the respective associations in getting an impaired program established.

The Regional Treatment Teams are very active and have great success with interventions and aftercare treatment, with 45 South Carolina physicians presently under contract with the Alcohol, Drug Abuse and Impaired Physicians Committee.

The Committee is still working with the SCMA Board of Trustees and the Board of Medical Examiners on getting the AMA Model Impaired Physician Treatment Act implemented.

The Chairman attended a workshop on September 12, 1986, sponsored by the State Board of Nursing for the Boards of Regulatory Agencies. The workshop was designed to familiarize the Boards of Regulatory Agencies on the work of the various impaired programs.

The Committee is still spending time promoting our services to the county societies and auxiliaries as well as the hospital administrators.

I wish to thank the committee members and the SCMA staff for their support during the past year. I would also like to thank the Board of Trustees for appointing a member from the Board to serve as liaison between the Committee and the Board.

Respectfully submitted,
Douglas F. Crane, M.D., Chairman

CONTINUING MEDICAL EDUCATION COMMITTEE

As reported to you at the Annual Meeting in 1986, two of the committee's tasks for the year were to develop new policies and procedures for accreditation of intrastate providers of continuing medical education, and to conduct a self-survey for accreditation of the SCMA as a provider of CME. I am pleased to report that the new procedures were finalized and the survey by the committee for Review and Recognition of the ACCME was conducted in late May.

As the new Chairman of the SCMA Committee for Continuing Medical Education, I was advised in November that the ACCME action following the survey and the reviewer's report was to give probationary recognition to our committee for a period of two years. The reason this action was taken was primarily due to a period of inactivity when the SCMA itself was reorganized and staff was changed and, as a result, there was some lack of conformity with the criteria set forth in the protocols. It was felt that the probationary period would afford us time for the committee and staff to reorganize and re-establish the accreditation program.

Specific recommendations were given to us to assist us in gaining complete conformity with the protocols in the future. I am pleased to report that actions have already begun towards that end, with new staff support with sufficient time to devote to the CME program, the assurance of adequate funding for the program, the development of new guidelines for co-sponsorship, the development of a policies and procedures manual for the accreditation program, and the restructuring of the forms used for all reporting procedures. These accomplishments have been achieved with the full support, understanding and encouragement of the SCMA leadership.

There is still much to be done now that the scientific program planning for this Annual Meeting is behind us. All institutions previously accredited by the SCMA must be re-surveyed to assure that their CME programs are also in conformity with the new protocols. This process will begin immediately after the Annual Meeting, with the committee asking each institution to suggest two appropriate dates for re-survey of their programs.

We would like to take this opportunity to express our appreciation to the SCMA leadership and staff for their assistance in our reorganization process. We would like to thank all of those dedicated physicians who have devoted their time and energies to assisting us with the scientific program for this year's annual meeting. We have a total of 53 hours of AMA PRA Category I CME credit available and, as this report is being prepared, AAFP Prescribed Credits have also been requested.

As we begin a new year for the SCMA, I am confident that the changes which have been implemented and those that are yet to come will provide the opportunity for physicians in South Carolina to improve their skills and continue to improve care for the patients in South Carolina.

Respectfully submitted,
O'Neill Barrett, Jr., M.D., Chairman

LEGISLATIVE ACTIVITIES COMMITTEE

The Legislative Activities Committee met on three occasions to consider legislation and recommend positions to the Board of Trustees on legislative matters.

Physicians have responded well to action calls through the "Legislative Update." The correspondence to members of the General Assembly on issues of concern is kept on file at SCMA. Physicians interested in specific legislative concerns are apprised of developments and are better able to follow the legislation and make effective contacts.

The SCAPPELL network has been revised to include relationship with new constitutional officers and members of the General Assembly.

SCMA has sponsored legislation to absolve physicians of personal liability for good samaritan activities performed within the Department of Health and Environmental Control and Health and Human Services Finance Commission. The liability would be incurred by the agency funding the program rather than the physician donating services.

Efforts are ongoing to contain the efforts of limited practitioners to legislatively expand their scope of practice and to receive mandated reimbursement for services.

A concerted effort to assure that the needs of all specialty areas within the profession of medicine are heard has begun. The Legislative Activities Committee has experienced great cooperation with the specialty societies in this regard.

The Doctor of the Day program continues to be a valuable service to members of the General Assembly. Volunteers have exceeded all expectations and we now have a list of physicians waiting to serve.

Respectfully submitted,
H. Cooper Black, M.D., Chairman

LIAISON COMMITTEE TO THE S. C. VOCATIONAL REHABILITATION DEPARTMENT — DISABILITY DETERMINATION DIVISION

The South Carolina Medical Association Disability Liaison Committee met on September 10, 1986, and October 20, 1986.

The first meeting was held in closed session without guests or visitor/speakers. The opinion and rationale for having a closed session was based on the fact that the committee had not formulated its goals and objectives for 1986-87, nor had the committee met to recapitulate its overall effectiveness or accomplishments for the prior year.

The consensus of opinion of the committee was that an all out effort should be made towards establishing and maintaining effective avenues of communication with the Disability Determination Division of Vocational Rehabilitation; that the impact of the Social Security Disability program was enormous, touching the lives of our patients and their families in many ways as well as that of the physicians and their staffs; and that no purpose can be served by assuming a non-cooperative stance of neutral attitudes. The committee was in full agreement that the South Carolina Medical Association should continue to have an active liaison commitment with the Disability Determination Division, to cooperate with that division in striving for better communication, understanding and to aid in alleviating any misconceptions, if they should occur.

The second meeting was held October 20, 1986. Mr. Rick Vandiver, Director of Disability Determination Division; the regional directors from Greenville, Charleston and Columbia; Mrs. Hay and Mr. Wayne Nance attended the meeting as invited guests and speakers.

Mr. Vandiver gave a summation of recent changes in the Social Security Disability program that had occurred over the past year. He effectively pointed out the impact that this would have on physicians in South Carolina, their patients and families. Mr. Vandiver clarified certain past issues that had concerned SCMA, reassuring the committee that many of these problems had been resolved. He also explained that the Social Security program had taken positive steps in improving claims adjudications, better means of communication with patients (claimants) and had in South Carolina enhanced its own educational-informational programs.

Past issues were again brought to the forefront regarding physicians' pay scales, how to deal with missed appointments by patients set up by the Social Security office for examinations, means of reporting information to the Disability Determination Division, the need for objective, descriptive information by the Disability Determination Division for accurate adjudication of claims and the question as to who should give or release medical information concerning patients.

These issues were discussed at length. Mr. Vandiver gave positive feedback regarding his position, indicating that he would do as much as possible. He did indicate that the question of who should give or release information had been resolved and that the position of the administration was that the treating physician should be relied upon as much as possible.

The meeting was adjourned with a sense of better improved relationship with the Disability Determination Division and its representatives.

Respectfully submitted,
Belton D. Caughman, M.D., Chairman

MEDIATION COMMITTEE

The Mediation Committee of the South Carolina Medical Association has not found it necessary to meet during the past twelve months. This is due in part to the number of medical societies with very efficient and active Grievance Committees, who are capably handling complaints that originate within their jurisdiction.

Twenty-six complaints came to the Mediation Committee last year. Of this number, four were non-SCMA members, eighteen have been resolved by the component society and four are still pending.

Respectfully submitted,
William J. Goudelock, M.D.,
SCMA Trustee and
Board Liaison

MEDICAL ASPECTS OF SPORTS COMMITTEE

For the 1986-87 year, the Medical Aspects of Sports Committee sponsored a different styled program for the Annual Meeting in Charleston. Dr. Stephen G. Rice was the keynote speaker for the session. His topic, "Athletic Medicine and Injury Control," reflected his part in the development of a health care system for the school age athlete in Seattle, Washington.

For the 1987 Annual Meeting, the committee will present a program with a broader scope. A panel of speakers will discuss topics ranging from "Developing a County-Wide Sports Medicine Program" to individual problems as expressed in "Nutritional Concerns of Athletes." Our aim is to have something of interest for the entire medical community.

In addition, the committee has continued its efforts to cooperate with the State High School League to promote better care for local student athletes through use of an improved examination form and increased medical coverage at athletic functions.

The sport of boxing continues to demand attention and the committee has issued comments to SCMA Delegates regarding resolutions pending in the AMA.

The next committee meeting will be held in conjunction with the SCMA Annual Meeting in Charleston, April, 1987.

Respectfully submitted,
W. Ray Henderson, M.D., Chairman

OCCUPATIONAL MEDICINE COMMITTEE

The SCMA Committee on Occupational Medicine held quarterly meetings during 1986. The Schedule of Fees for Physicians and Surgeons for Services Rendered under the South Carolina Workers' Compensation Law was not revised and reprinted during the year, but several hundred deletions and additions were made in the Fee Schedule to conform with changes in the 1986 CPT Manual. Many hours were contributed to this effort by all members of the committee.

Physicians' fees which seemed inappropriate to the Medical Department of the Industrial Commission were reviewed at each meeting and recommendations were made to the Commission on an individual case basis.

The committee hosted dinner meetings with the Commission twice during the year. As usual, these meetings prompted very frank and very productive discussions of our mutual problems and concerns relating to providing the best possible medical care for South Carolina's injured workers at the lowest possible cost.

Members of the committee participated in the planning and presentation of two educational seminars sponsored by the Commission during the year. Both seminars were well attended and very worthwhile.

In summary, 1986 was another busy year for the committee in fulfilling its role as liaison between the South Carolina Medical Association and the South Carolina Workers' Compensation Commission, and as a resource group to the Commission as it attempts to fairly administer the Workers' Compensation Law of the State of South Carolina.

Respectfully submitted,
Walter G. Coker, M.D., Chairman

PERINATAL AND MATERNAL HEALTH COMMITTEE

The Perinatal and Maternal Health Committee experienced an active and productive year of effort to improve the health status of mothers and babies in South Carolina.

During the past year, the Governor, DHEC, and the South Carolina press have placed great emphasis on the problems of teenage pregnancy and the high infant mortality rate in the state. As a result, the SCMA, through the Perinatal and Maternal Health Committee, has become increasingly involved in working with various public and private programs which seek to address these problems.

The Committee has provided input to the Governor's Task Force on Teenage Pregnancy and to the Governor's Council on Maternal and Child Health. Ongoing communication has been conducted with DHEC regarding such issues as the High Risk Channelling project, required newborn metabolic screening, and SIDS autopsies. Discussion with the State Health and Human Services Finance Commission has also been conducted regarding billing difficulties in the High Risk program. Commission's proposed criteria for early discharge of mother and baby were also studied.

Representatives of the Committee serve on the Medical Neglect of Infants Task Force at the Department of Social Services. The Committee has expressed its concern regarding the proposed hotline. SCMA investigation into the regulations indicates that physicians are not subject to such investigations and DSS has been requested to clarify this in their procedure.

The Committee continued to review all maternal mortalities with the attending physician and is aware of plans by DHEC to provide similar review of newborn mortalities, however, SCMA involvement in the latter has not been requested.

Future plans of the Committee include preparation of an upcoming issue of the *SCMA Journal*, which will be devoted to teenage pregnancy.

We would like to thank the Committee members for their excellent attendance and involvement. Our thanks is extended, too, to the SCMA staff for their assistance.

Respectfully submitted,
Tom C. Austin, M.D., Co-Chairman
Hal R. Rubel, M.D., Co-Chairman

PRIMARY CARE/MEDICAID AND INDIGENT CARE COMMITTEE

The South Carolina Medical Association Primary Care/Medicaid and Indigent Care Committee has met six times this year.

We mailed letters to all physicians in the state detailing our concerns about indigent care. There was a huge response to this letter asking for information on starting indigent clinics, specific local problems, and problems with Medicaid. In most cases we have been able to give information and help solve these problems.

The 1987 South Carolina state budget projects a shortfall this year. The Medicaid budget has been severely cut, but we have managed to minimize the cut to physicians through discussions with Health and Human Services Finance Commission. We also have met with members of the House Ways and Means Committee to request more funds for physicians. We have shown them that increasing physician reimbursement for unit office costs from $11.44 in 1983 to $15.30 in 1986 has increased physician participation from 3,373 physicians to 3,876. Approximately 70 percent of physicians in South Carolina now accept Medicaid. This increase in fees to physicians has also allowed us to show an increase in the number of office visits for Medicaid patients from 316,602 to 366,202. This demonstrates that we have increased the access to medical care for the poor people in our state. We believe that the members of the House Ways and Means Committee heard our message and will do everything in their power to improve funding for us.

The committee requests that all members agree to see Medicaid patients, even if we have to take a small cut in fees this year. We do have an obligation to see that the poor people of South Carolina receive adequate medical care. If we continue our efforts in this regard, we have been assured that both the legislature and Health and Human Services Finance commission will continue to try to increase our fees.

Respectfully submitted,
Benjamin E. Nicholson, M.D., Chairman

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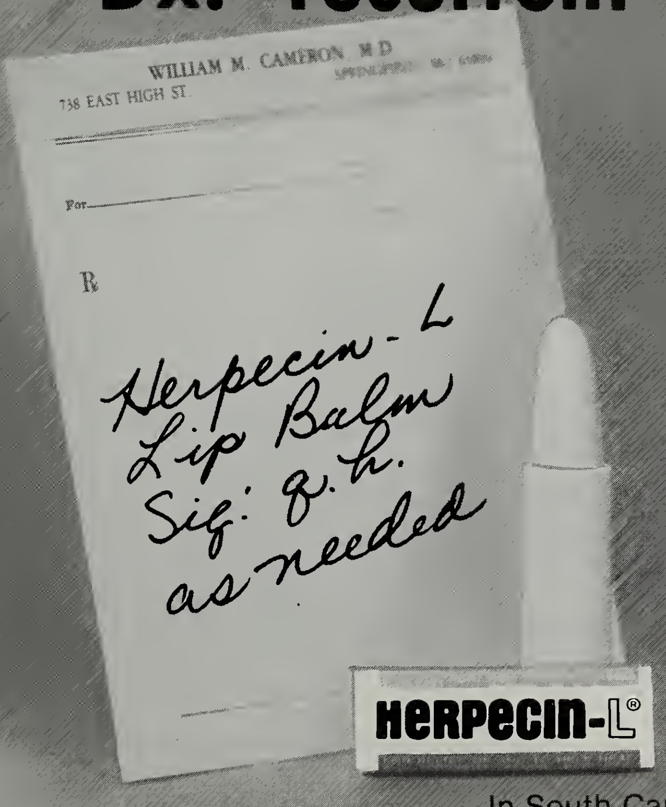

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MEMORIAL COMMITTEE

At this time in the proceedings of this body, we pause to honor those of our colleagues who have departed since this assembly was in session. Our departed brothers, I suggest to you, were honorable people who shared the same feelings and concerns for mankind and especially the sick and disabled mankind as we. We honor them at this time.

I will ask you to stand while the names are read and afterwards for a moment of silence. Dr. James D. Gould, Greenville; Dr. Robert E. Foster, Bamberg; Dr. Edith Eskrigge Haynes, Columbia; Dr. Homer P. Hines, Chesnee; Dr. James W. Fouche, Columbia; Dr. Robert M. Laughlin, Hilton Head; Dr. Thomas D. Savage, Charleston; Dr. Robert O. Lipe, Aiken; Dr. Clarence Workman, Greenville; Dr. Lawrence J. Crowl, Greenville; Dr. David F. Watson, Greenville; Dr. Lane E. Mays, Seneca; Dr. John Parks Booker, Greenville; Dr. William D. Irvine, Laurens; Dr. Marion Peeples, Bluffton; Dr. William F. Bultman, Sumter; Dr. Forde A. McIver, Charleston; Dr. John M. Fleming, Spartanburg; Dr. Gabriel Paul Joseph, Myrtle Beach; Dr. James W. Jervey, Jr., Greenville; Dr. J. B. Floyd, Winnsboro; Dr. R. Garrison Latimer, Cayce; Dr. Jerome Werstern, Columbia; Dr. J. Ralph Dunn, Sumter; Dr. Lloyd W. Luttrell, Spartanburg.

Respectfully submitted,
William L. Perry, M.D., Chairman

MEDICAL ADVISORY COMMITTEE TO THE SOUTH CAROLINA DEPARTMENT OF VOCATIONAL REHABILITATION

The South Carolina Medical Association Advisory Committee to the South Carolina Department of Vocational Rehabilitation met on Wednesday, February 25, 1986, at the Sheraton, Columbia, South Carolina. Dr. Ben N. Miller, Chairman, presided. Members of the committee present were: Dr. Frank Axson, Seneca; Dr. Kenneth J. Boniface, Charleston; Dr. Malcolm U. Dantzler, Columbia, representing DHEC; Dr. Edward E. Kimbrough, Columbia; Dr. Woodrow W. Long, Jr., Greenville; Dr. Braxton B. Wannamaker, Charleston; Dr. Charles F. White, Columbia. Ms. Barbara Whittaker represented the South Carolina Medical Association.

Vocational Rehabilitation was represented by Mr. Joe S. Dusenbury, Commissioner; Dr. Robert E. Brabham, Assistant Commissioner, Client Services; Mr. Preston Coleman, Director, Agency Internal Audits; Mr. Walter J. House, Client Services Consultant; Mr. Charles LaRose, Assistant to the Commissioner; Mr. Edward McMillion, Director, Staff Development and Training; Mr. Wayne Nance, Quality Assurance Analyst; Mr. Vince Rhodes, Client Services Supervisor; Mr. T. E. Ringer, Assistant Commissioner, Administrative Services; Mr. Raynold Stoudemayer, Supervisor, Client Services; Mr. Richard Vandiver, Director, Disability Determination Division; Mr. Larry Harrelson, Regional Supervisor; and Dr. Jim Weston, Disability Determination Division.

Dr. Ben Miller welcomed the committee and expressed his appreciation for their presence. He stated that when physical restoration was added to Rehabilitation it was determined that there would be a Medical Advisory Committee and that the committee members would be in certain medical specialties. When the committee work was reorganized, it was determined that the advisory committee should be brought into the South Carolina Medical Association. This was implemented with the proviso that Rehabilitation would nominate the committee members.

Mr. Joe Dusenbury, Commissioner, was presented and he stated that he felt the committee was aware of the financial problems as far as the federal government was concerned. He pointed out that Vocational Rehabilitation was going through a soul searching process trying to determine what rehabilitation will be like in the next five years.

A number of years ago physically disabled people were deeply concerned about architectural barriers and transportation that was needed in the process of getting into the mainstream of society. Vocational Rehabilitation in South Carolina answered the challenge and has been active with the Governor's Committee on Employment of the

Handicapped and helped organize local mayor's committees trying to create more consciousness about disability.

The Rehabilitation Act Amendments of 1986, which included reauthorization for the next five years, also included the mandate that rehabilitation engineering be included in the rehabilitation process. Legislation specifically identified Vocational Rehabilitation in South Carolina as being responsible for looking at the technical devices that have been developed by universities around the country that were funded by the National Institute of Handicapped Research. South Carolina is one of two centers that would have the opportunity to examine the devices and try to transfer the technology into other states. There has been contact with the USC School of Medicine in Columbia and with engineering deans at the University of South Carolina and Clemson University. Vocational Rehabilitation will provide the mechanism where this work can be brought together for utilization.

It was also announced that Vocational Rehabilitation facilities for the severely disabled needed to be expanded, and within two or three weeks the new high tech training building with new dormitory should be completed. These buildings are designed to work specifically with severely disabled individuals and will go along with the Independent Living Center that is also nearing completion. With special project funding, guidance and support are being provided for people who do not fulfill the qualifications for rehabilitation, but do benefit from the independent living program.

Funds have also been secured for a muscular development building including a specially designed swimming pool. Construction is already underway for this new facility. Some of the physical therapy work being done at the comprehensive center will be transferred to this facility. The type of clinic responsibilities are not known at this time, but will be worked out with the medical school.

Mr. Richard Vandiver, Director, Disability Determination Division, was present and he stated that the primary function for the Disability Determination Division was to process disability claims for the Social Security Administration. Generally the department handles 55,000 to 60,000 cases which represents 40,000 people.

During 1980, a law was passed which required that everybody who was on the rolls and drawing disability would have their claims looked at periodically to assure that they were still eligible for benefits. This controversial review was begun in late 1981. Most of the problems stemmed from claims of mental impairments. The 1984 regulations implemented a new approach to the evaluation of mental impairment claims. These regulations have been put into effect and, as a result, psychiatrists and psychologists have been added to the medical consultation staff.

Two other areas that are currently undergoing analysis and change are AIDS and chronic Epstein-Barr claims. Mr. Vandiver stated that the department has handled about ninety AIDS claims. He pointed out that if a person has AIDS, he would be found disabled and encouraged the medical community to refer these people to Social Security for a claim.

The two new disorders that are being sent to the Department are Epstein-Barr virus and HGLV I which is related to the AIDS virus. It was pointed out that the department would like to have any information the medical community could give concerning these disorders.

A change is expected in the evaluation of cardiovascular impairment and a lot of work is expected to be done in this area. As a result of the financial cutback there will be less medical information and types of examinations purchased. About three to three and one-half million dollars a year are spent for examinations and evidence. This will be reduced by approximately $700,000 to $800,000, but the department fully intends to maintain quality in the decision making process.

Dr. Robert E. Brabham was introduced and he stated that Vocational Rehabilitation, after listening to the medical community, is making a concerted effort to improve services to certain physical disability groups. Two of these are cardiac and cancer rehabilitation. At present, there are nine cardiac rehabilitation programs going on in South Carolina and four others will probably be underway during 1987. Vocational Rehabilitation is involved with all of these programs. Last year about 700 people from the cardiac program were served by Vocational Rehabilitation and in the first seven months of this year the same number has already been served.

With medical advances, people are living and surviving with cancer for extended periods of time and have opportunities and need to go back to work. Even though the medical problems have been dealt with, the psychological aspects of returning to the work site have been a real problem. Vocational Rehabilitation is finding great opportunities to provide some substantial services in the vocational aspects as relates to cancer. A brochure has been printed regarding Vocational Rehabilitation involvement with cancer rehabilitation and will be distributed to the medical community.

In 1985, requests began to come for assistance for people with chronic pain. So far there have been 184 individuals who have come through the pain clinic and of this number 66 have been able to complete the process and return to their jobs. Vocational Rehabilitation is developing relaxation techniques and some diversion techniques that will assist these individuals to remain employed with the pain.

Mr. Larry Harrelson was introduced and he talked about the Cochlea Implant. It was pointed out this implant would not help a person hear, but would assist in lip reading. The Cochlea Implant is recommended only for a small group of people who have certain skills or access, for example, generally limited to people who have had some hearing in their life and also in the evaluation qrocess were found not able to benefit from a hearing aid. The instrument will not restore language. The implants are very expensive, but there are some insurance companies that will pay part or all of the expense. Medicaid coverage is also in effect. It was pointed out that Vocational Rehabilitation would be involved with the prosthesis only and will not be involved with surgery, hospital or follow-up care.

There being no further business or discussion, the meeting was concluded with dinner, provided by the department.

Dinner was served and at the completion of the meal, each member of the Advisory Committee had an opportunity to ask questions from the members of the agency. There was a thorough discussion. No motion was made or action taken and the committee adjourned.

Respectfully submitted,
Ben N. Miller, M.D., Chairman

SCMA/S. C. HEART ASSOCIATION JOINT COMMITTEE ON CARDIAC REHABILITATION

This committee is composed of members from the SCMA, South Carolina Heart Association and a representative from the South Carolina Vocational Rehabilitation Department. Its function is to oversee the certification process for cardiac rehabilitation programs in South Carolina. This involves establishing criteria, evaluating existing programs and new programs, and recommending to the SCMA Board of Trustees their certification.

During the past year, two programs have received full certification: The New Life Cardiac Rehabilitation Program, Providence Hospital, Columbia; and Marion Cardiac Rehabilitation Program, Marion. Two new programs have received provisional certification on the basis of data submitted and are awaiting on-site inspections. These are: Grand Strand General Hospital Cardiac Rehabilitation Program, Myrtle Beach; and Anderson Memorial Hospital Cardiac Rehabilitation Program, Anderson.

The committee encourages educational efforts regarding cardiac rehabilitation. A symposium was held at Myrtle Beach, sponsored by the McLeod Regional Medical Center in September, 1986. A workshop on cardiac rehabilitation is planned by the Charleston Cardiac Rehabilitation Program (Medical University of South Carolina/ The Citadel) to be held in Charleston, June 25-26, 1987.

Respectfully submitted,
William H. Barnwell, II, M.D., Chairman

SCMA/SCNA JOINT LIAISON COMMITTEE

The SCMA/SCNA Liaison Committee met on three occasions this year. Our last scheduled meeting was canceled due to a lack of meaningful agenda items.

The major item to become before the committee this year was the proposed change in the Nurse Practice Act. However, due to a lack of physician committee members being present, no meaningful action could be taken. This item was more appropriately handled by the Legislative Activities Committee. Due to poor physician participation, as well as a lack of specific function, I feel that the scope and function of this committee need to be re-evaluated.

Respectfully submitted,
James M. Lindsey, Jr., M.D., Chairman

DENNIS J. GALBRAITH, M.D.

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REPORT OF THE EXECUTIVE VICE PRESIDENT

It is my pleasure to report to the House of Delegates on behalf of the SCMA staff.

Let me first express my personal appreciation for the warm and friendly reception I received as I accompanied the President on his county visitations. This past year I have had the opportunity of visiting with 25 counties and each and every visit was enjoyable.

As you are all aware, the Medical Care Foundation bid on, but did not win the PRO contract for South Carolina. As a result of the loss of the Federal contract, the Medicaid contract was terminated as well, resulting in the cessation of all activity by the Foundation. We are keeping the Foundation active as a corporate entity should some activity arise that could be placed under the oversight of the Foundation Board.

SCMA staff have had a busy year dealing with the concerns of the membership relating to Medicare, Medicaid, CHAMPUS, as well as a variety of activities generating from the various state agencies. Barbara Whittaker has done an outstanding job keeping track of these activities and getting answers to the myriad of questions raised by our members.

Legislative activities have consumed a large portion of my time and 150 percent of Susie Nickles' time. Encroachment on the practice of medicine has been attempted by many of the health related professions, as well as some that were unrelated. The hard work of our lobbyist and the willingness of the membership to get involved in grassroots activities was successful in preventing passage of these bills. Tort reform was our other major thrust and although no bill was passed, we are back working hard for a bill again this year with the South Carolina Civil Justice Coalition.

You will recall that last year, the House passed a resolution recommending a study of the feasibility of hiring in-house public relations staff. The study found that such a move was feasible and we hired Melanie McLendon as our Director of Communications. Melanie has been busy establishing herself as the contact point for the media and acquiring the knowledge necessary to develop a strong Public Relations program.

The Business and Finance activities, under the direction of Wayne Cox, our Controller, are functioning very smoothly. The organization is fiscally sound with our reserves at the designated levels, our budget is in the black and our investments sound.

The planning and coordination of meetings is a difficult and complex task, and tremendous credit is due to Debbie Shealy for making not only the meetings of the SCMA, but the specialty societies we staff, successful. This has been an especially difficult year for Debbie with having to deal with a new hotel for this meeting, and I am sure she would appreciate hearing any comments you may have with regards to the meeting.

Membership continues to grow and various membership benefits are being utilized on a broad scale. The Members' Insurance Trust, staffed by Julia Brennan and Lin Patterson, offers the finest medical insurance coverage in the state at a competitive price. The disability insurance program has enrolled over 20 percent of the membership and the Intrav trips throughout the world continue to get superior ratings from the majority of SCMA travelers.

Another complex task performed by staff is that of providing the necessary support to the officers. Keeping track of incoming and outgoing correspondence, scheduling appointments, and coordinating a variety of other activities is the job of Donna Houston. In addition to the above, Donna also serves as recording secretary to the Board and the House of Delegates.

The SCMA *Journal* published monthly continues to be a premiere publication under the able editorship of Dr. Charles Bryan with staff support from Joy Drennen. Joy also staffs the Risk Management and CME activities.

There is a vast array of other tasks that are performed by other staff members; word processing and computer operation tasks are carried out by Ellen Kennedy and Lisa Eldreth, bookkeeping by Tricia Crumpton, secretarial by Barbara Garvin and the mailroom and printing duties by Fred Leaphart.

My duties, as your Chief Executive Officer, keep me out of the office much of the time and the critical link between the Association and me is my Executive Secretary, Pat Healy.

Let me say that the SCMA has a very competent staff who are working diligently to serve organized medicine to the best of their ability. We thank you for that opportunity.

Respectfully submitted,
William F. Mahon,
Executive Vice President

REPORT OF THE SCMA MEMBERS' INSURANCE TRUST

The SCMA Members' Insurance Trust has completed another year of providing for members of the SCMA, their families and office staff a comprehensive health insurance program.

The Trust renewed the contract with Provident for 16 months.

This year there was an increase in premiums due to increased utilization and inflation.

Benefits were extended to provide Hospice and 90-day extended liability coverage. The Trust is operating on a fiscally sound basis and is maintaining adequate reserves to cover any unforeseen contingency.

I would like to express my sincere appreciation to the members of the Board and the SCMA staff for their hard work this past year.

Respectfully submitted,
Edward Mattison, M.D., President

REPORT OF THE SOUTH CAROLINA INSTITUTE FOR MEDICAL EDUCATION AND RESEARCH (SCIMER)

This is a report on the activities of SCIMER for the past year and plans for the future. The board did not meet formally during the year, but there were two reports with questions answered by mail. The next scheduled meeting will be on Friday, May 1, 1987, at the Omni Hotel in Charleston.

The first annual Leonard Douglas Memorial Lecture will be given on Thursday, April 30, 1987, with Congresswoman Elizabeth Patterson as the speaker. We feel fortunate to have someone of prominence who knew and appreciated Leonard to be with us on this occasion.

We will award a total of six scholarships to students of our two medical schools at the House of Delegates meeting on Sunday, May 3, 1987. Four of these — two to students of each school —

are the awards given in conjunction with the medical auxiliary and their scholarship program. The Henry Stuckey, M.D., award will again go to a student who qualifies under the stipulations of Dr. Stuckey's request.

A new scholarship this year was made possible by a generous donation by Cardiology Consultants (Drs. Dorchack, Story and Eickman and their wives) of Spartanburg in honor of a number of physicians in the upstate — primarily in the Ninth Medical District. This award will go to a deserving student from this area in one of the two schools.

The "Review and Update Meeting" held at Hilton Head on September, 1986 was successful with ninety plus attendees and a profit of between $4-5,000. In view of some of the uncertainties of the new tax law and its impact on such meetings, the board has decided that we will not plan a meeting for 1987, but will discuss at the next meeting the decision as to a meeting in 1988 and beyond.

We have received funds from memorials through the year and we would urge the membership of SCMA to consider this throughout the year. Donations may be made to the Leonard Douglas Memorial fund or to SCIMER and are tax deductible. We would like to increase our scholarship and other awards such as the one to be made on alternate years beginning in 1988 to the medical student who submits the best essay on a socioeconomic or ethical issue related to medicine and in 1989 to a medical student on the basis of the best research work. Plans are to continue these awards on even and odd numbered years. The first awards will be $1,000 with the hope that the amount can be increased subsequently.

It has been a pleasure to serve with the dedicated members of the SCIMER Board.

Respectfully submitted,
Euta M. Colvin, M.D., President

THE SOUTH CAROLINA POLITICAL ACTION COMMITTEE

The South Carolina Political Action Committee had a banner year in 1985-86. In the primary-general election cycle, SOCPAC supported 33 candidates and was successful in 30 races. Of significance was the defeat of two incumbents in House Districts 65 and 95.

The SOCPAC Board has adopted policies that more closely tie the candidate's voting record with the level of campaign support. The Board met on four occasions in 1985-86 and reviewed 124 open house seats, two constitutional seats and seven federal seats.

Membership reached a record 720 — 60 percent growth above 1985 total membership. The PAC Board authorized the development of a membership recruitment brochure. Our goal is to triple membership in order to ensure that organized medicine has an opportunity to be a strong voice in the critical senate elections in 1988.

Respectfully submitted,
Randolph D. Smoak, Jr., M.D., Chairman

REPORT OF THE DEPARTMENT OF SOCIAL SERVICES

Office of Children and Family Services. There are approximately 940,800 children under the age of 18 in South Carolina. Many of these children and their families must turn to social service agencies for assistance. Responsibility for children without adequate parental care, those who are victims of abuse or neglect, abandoned or otherwise deprived of family life form the basis for the child welfare programs operated by the Department of Social Services. These programs include: Adoption, Protective and Preventive Services for Children, Permanency Planning for Foster Children; Specialized Residential Treatment for Children, Child Development, Family Centered Services, Home Evaluation and Supervision, and Family Management Counseling. Essentially, child welfare services may be defined as social services which: 1) protect and promote the welfare of all children, including homeless, dependent or neglected children; 2) prevent, remedy, or assist in the solution of problems which may result in the neglect, abuse, exploitation, or delinquency of children; 3) prevent the unnecessary separation of children from their families by identifying family problems, assisting families in resolving their problems, and preventing breakup of the family where the prevention of the child's removal is desirable and possible; 4) return to their families children who have been removed, by the provision of services to the child and the families; 5) place children in suitable adoptive homes in cases where return to the biological family is not possible or appropriate; and 6) assure adequate care of children away from their homes in cases where the children cannot be returned home or cannot be placed for adoption.

The two programs which follow involve daily interaction with the medical community.

Protective and Preventive Services for Children. Persons who come to the attention of the Department of Social Services in need of protective services are those who are potentially abusive to their children or those who are suspected of having abused or neglected their children. During FY 1985-1986 there were approximately 17,544 reports made to the Department of Social Services which required caseworkers to assess the reports and to determine their validity. Of the reported cases, over 6,000 cases were indicated for abuse and neglect and required the department's intervention to determine whether the child was "at risk" and the need for support services to the family. The caseworkers counsel with parents, children, and foster parents and are advocates for the child and family to law enforcement and Family Court.

Treatment in child protection cases may include temporary placement of children out of home with caseworkers arranging visits for the child(ren) with their families. Child protective services caseworkers also provide information and referral services to families requesting assistance not related to abuse and neglect.

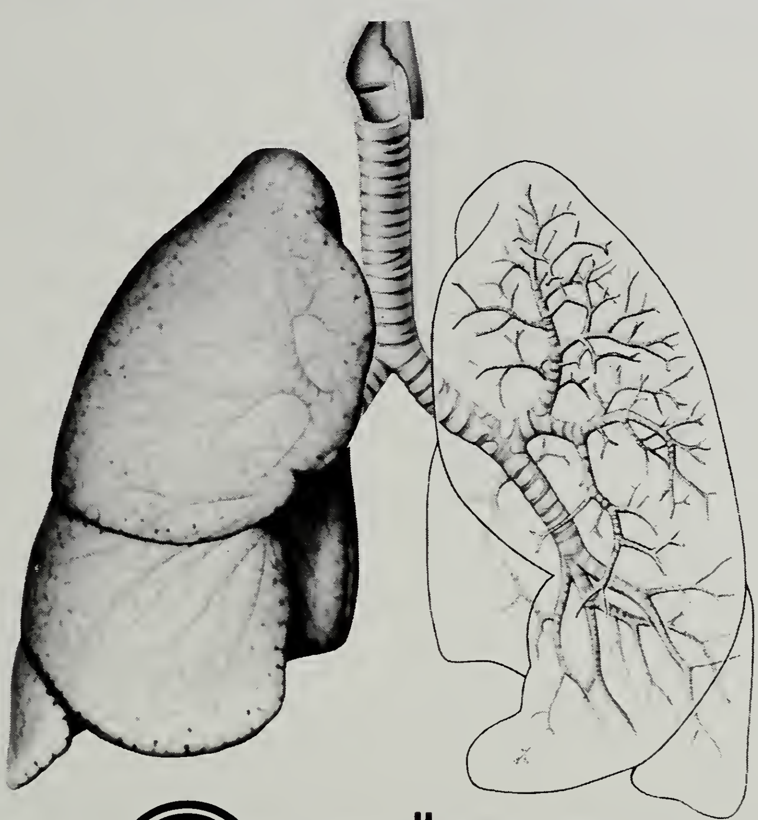
Permanency Planning for Foster Children. This service provides substitute care in a licensed/approved substitute care facility for children who are unable to remain in their own homes, and to assure the timely development and implementation of permanent plans for each foster child.

Adult Services, Battered Spouse Program. State funds of $690,000 were appropriated to the Department of Social Services for the Battered Spouse Program for FY 1985-1986. Contracts were awarded to continue emergency shelter services for spouse abuse victims in Greenville, Charleston, Sumter, Richland, Horry, York and Aiken Counties. One new shelter program, established in Greenwood County, was also funded. The number of adult victims receiving shelter from these programs was 1,132. *Homemaker Services.* Homemaker Services are major support services provided to Adult and Child Protective Services clients. These services assist families or individuals to overcome specific barriers, to improve the quality of life for young families and to help frail, aged, ill and disabled adults live as independently as possible. *Personal Care Aide Services.* The purpose of Personal Care Aide Services is to restore, maintain and promote the health status of clients through the provision of the necessary services of support for activities of daily living, home support, medical monitoring and client transportation and/or escort services.

Medical Services, Medicaid Eligibility and Program Liaison. New program responsibilities: 1) expanded eligibility for Community Long Term Care (CLTC) recipients was implemented March 1, 1985. Through a waiver process CLTC has expanded services to people in the community who would be eligible if they were institutionalized. CLTC expanded eligibility increased the number of persons receiving Home and Community Based Waivered Services by approximately 1,288; and 2) a category of eligibility, Ribicoff, was implemented effective May 1, 1986. This coverage group provides Medicaid benefits to those children under eighteen who meet the definition of dependent child and would be eligible for AFDC except for the deprivation criteria.

Respectfully submitted,
The S. C. Department
of Social Services

Consider the causative organisms...



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250-mg Pulvules® t.i.d.
offers effectiveness against the major causes of bacterial bronchitis

Haemophilus influenzae, ***H influenzae***, ***Streptococcus pneumoniae***, ***Streptococcus pyogenes***
(ampicillin-susceptible) (ampicillin-resistant)

Note: Ceclor® is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

Ceclor® (cefaclor)

Summary. Consult the package literature for prescribing information.

Indications: Lower respiratory infections, including pneumonia, caused by susceptible strains of *Streptococcus pneumoniae, Haemophilus influenzae,* and *S. pyogenes* (group A beta-hemolytic streptococci).

Contraindications: Known allergy to cephalosporins.

Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:
- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- In renal impairment, safe dosage of Ceclor may be lower than that usually recommended. Ceclor should be administered with caution in such patients.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:
- Gastrointestinal (mostly diarrhea): 2.5%.
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, erythema multiforme, serum-sickness-like reactions): 1.5%; usually subside within a few days after cessation of therapy. These reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%.

Abnormalities in laboratory results of uncertain etiology
- Slight elevations in hepatic enzymes.
- Transient fluctuations in leukocyte count (especially in infants and children)
- Abnormal urinalysis; elevations in BUN or serum creatinine
- Positive direct Coombs' test
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly)

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REPORT OF THE STATE BOARD OF MEDICAL EXAMINERS OF SOUTH CAROLINA

Board report for calendar year 1986. This past year has been a very active and effective year for the board on the licensure, disciplinary and legislative fronts. This report shall present a brief statistical summary and review of the past year.

Licensure. In 1986, this board issued 540 permanent licenses to physicians. This compares to 502 issued in 1985. Eighty-seven of these licenses were issued by way of the FLEX examination. Four hundred and fifty-three were issued by endorsement of credentials through the National Board or other state boards. Of the 540 permanent licenses issued, 33 were issued to graduates of foreign medical schools. By way of comparison, in 1985 graduates of foreign medical schools received 23 permanent licenses. Of the 540 permanent licenses issued, 15 were issued to Doctors of Osteopathy.

This board administered the FLEX examination in June and in December. In June, 17 applicants took the exam; 14 (82 percent) passed and three failed. In December, a total of 14 took the exam; 12 (86 percent) passed and two failed.

Limited licenses are for residency training. Special supervised practice environments, which must be approved by the Board, occasionally qualify for limited licensed physicians. A limited license is for a one-year period (July-June 30) or a part thereof. Limited licenses were issued to 220 United States/Canadian graduates in 1986; 83 limited licenses were issued to graduates of foreign medical schools.

Thirteen new Physician's Assistants were certified by the board in the past year. There are 52 Physician's Assistants licensed in South Carolina.

The *Medical Directory of Physicians Licensed in South Carolina* was again printed in 1986. In the 1986-87 directory there were 4,974 physicians practicing in-state, and 1,377 licensed in South Carolina, but practicing out-of-state.

Investigatory and Disciplinary Activities. In 1986, the board received 95 complaints. This compares to 78 received in 1985. Nineteen final orders were issued by the board during 1986. These final orders resulted in seven voluntary surrenders; six indefinite suspensions; four private reprimands and two public reprimands. Additionally, the board reinstated the license of one physician, with specific probationary and other conditions. These disciplinary cases involved sanctions for inappropriate patterns of practice, criminal convictions, unprofessional and unethical contact with a patient, patient abandonment and substance abuse.

Further, two disciplinary decisions by the board were affirmed by the South Carolina Supreme Court in 1986. In both cases the court agreed with the judgment and sanction of the board.

Legislative Activities. In an important development, the legislature, at the initiative of the board and with the active support of interested parties, such as the South Carolina Medical Association, passed the mandatory Hospital Reporting Act in February, 1986. This act which is reprinted on page 43 of the current directory, mandates that the medical director or chief of staff of any health care facility in this state report to the board certain disciplinary actions. The act specifically provides that any person making this report is immune from criminal and civil liability if the report is made in good faith without malice. The board has already seen the importance of this legislation in reports from hospitals that have taken disciplinary actions against physician's privileges.

In 1986, the board also initiated certain changes in its rules and regulations relating to licensure of physician's assistants. These changes represent a "fine tuning" of current regulations.

The legislature also passed the South Carolina Respiratory Care Practice Act. This establishes a respiratory care committee as an advisory committee to the Board of Medical Examiners. The Respiratory Care Practices Act provides for the certification by the board of respiratory care practitioners in the state.

Other Initiatives. The board, in recognition of its critical role in protecting the public and maintaining the integrity of medical practice in the state, published an information brochure summarizing the board's purpose and mission. A copy of this brochure was sent to all physicians in the state, all members of the General Assembly and interested organizations and institutions. This brochure has been extremely well received by physicians, legislators and the general public.

Four new board members were named: C. Dayton Riddle, M.D., of Greenville; and Mrs. Esther H. Tecklenburg of Charleston are appointees of the governor. In addition, James S. Garner, Jr., M.D., of Mullins; and James R. Edinger, D.O., of Orangeburg were elected to fill vacancies.

The current officers and members of the board are: J. Ernest Lathem, M.D., President (re-elected 2/87); Spencer C. Disher, Jr., M.D., Vice-President (elected 2/87); R. Patten Watson, M.D., Secretary (elected 2/87); Vernon E. Merchant, Jr., M.D.; James C. Holler, Jr., M.D.; Edgar O. Horger, III, M.D.; C. Dayton Riddle, Jr., M.D.; Mrs. Esther H. Tecklenburg; James S. Garner, Jr., M.D.; and James R. Edinger, D.O.

Current members of the Medical Disciplinary Commission are: Alan W. Fogle, M.D.; John A. Ouzts, III, M.D.; John S. Selby, Sr., M.D.; Franklin L. Clark, M.D.; Boyce M. Lawton, Jr., M.D.; C. Alden Sweatman, Jr., M.D.; Charles T. Battle, M.D.; James E. Bleckley, M.D.; George W. Smith, M.D.; Jack A. Evans, Jr., M.D.; W. Wallace Fridy, M.D.; A. Frank Weir, Jr., M.D.; Richard P. Hughes, M.D.; Robert E. Lee, M.D.; James L. Maynard, M.D.; Joseph W. Dunlap, Jr., M.D.; Daniel M. Ervin, M.D.; and Emmett W. Flynn, Jr., M.D.

In 1986, N. B. Heyward retired as the Board's Executive Director. Stephen S. Seeling was named the new executive director, effective December 16, 1986.

Respectfully submitted,
J. Ernest Lathem, M.D.,
President of the Board

RESOLUTIONS

SUBMITTED BY: *Chester County Medical Society*
SUBJECT: **INSURANCE PROVIDER SCRUTINY**

WHEREAS, The 1986-87 period has seen record losses in the HMO industry; and

WHEREAS, The after the fact addition of such unbargained for items of co-payments, formularies, etc., are commonly being added after bidding for state and industrial contracts; and

WHEREAS, There has been the total collapse of the Medicare Complete 65 plan; and

WHEREAS, Virtually no HMO has shown any profitability; and

WHEREAS, Frequent changes in HMOs, insurance and providers is detrimental to patients and their continuity of health care; be it

RESOLVED, that the South Carolina Medical Association call on the State Insurance Commission for closer scrutiny of proposed plans and contracts and that insurance providers be required to abide by these contracts for periods of at least two years without substantial amendment.

SUBMITTED BY: *Chester County Medical Society*
SUBJECT: **STATE REGULATORY INFORMATION**

WHEREAS, South Carolina has of late experienced an explosion of regulatory information involving HMOs, communicable diseases, prenatal care Medicare/Medicaid regulations; and

WHEREAS, The communication of this information is poorly timed, often misdirected and often absent in any fashion; and

WHEREAS, Oftentimes regulations are issued which affect providers who have no chance to comment on them prior to enactment; be it

RESOLVED, That the South Carolina Medical Association request state agencies to set up a regular, timely communication with ALL the state's physicians in which proposed regulations could be aired for commentary and new regulations seen well prior to their imposition.

SUBMITTED BY: *Horry County Medical Society*
SUBJECT: **S.342 PHYSICAL THERAPISTS BILL**

WHEREAS, Senate Bill 342, to amend Section 40-45-20, Code of Laws of South Carolina, 1976, relating to physical therapists; so as to revise the definition of physical therapy, and to allow the *independent practice* of physical therapists has been introduced into the General Assembly of the State of South Carolina; and

WHEREAS, Physical therapists have had no education in the diagnosis of medical or surgical disease; and

WHEREAS, The institution of a physical therapy or rehabilitation program *requires,* first and foremost, a *medical diagnosis;* and

WHEREAS, It is the sworn responsibility of the physicians of South Carolina to protect the health of their patients and general public; therefore, be it

RESOLVED, That the South Carolina Medical Association vigorously and actively seek the defeat of such legislation; and be it

RESOLVED, That the South Carolina Medical Association make all efforts to educate all members of the General Assembly of the State of South Carolina so as to prevent the future consideration of such ill conceived legislation.

SUBMITTED BY: *Sumter-Clarendon-Lee Medical Society*
SUBJECT: **TOXIC WASTE**

WHEREAS, We, the members of the Sumter-Clarendon-Lee Medical Society feel that our foremost obligation is to protect the health and well-being of the citizens we serve, and feel that the hazardous waste landfill operated by GSX, currently doing business in Sumter County, poses a serious potential danger to the health and well-being of our citizens and all of South Carolina; and

WHEREAS, The currently situated landfill overlies the vital acquifer which supplies water to an extensive population, and lies immediately adjacent to one of South Carolina's most vital wildlife and recreation resources, the Santee-Cooper Lake System; and

WHEREAS, This is storage, not disposal, and is doomed to fail but the landfill is accepting waste from 26 states as well as South Carolina; and

WHEREAS, The South Carolina Medical Association has previously adopted a resolution in 1985 "that we are opposed to dumping of toxic waste from other states into the State of South Carolina, and in particular we are opposed to the further operation of a toxic waste dump at Pinewood, South Carolina"; and

WHEREAS, The South Carolina Medical Association has previously adopted a resolution in 1986 "that the South Carolina Medical Association go on record as supporting our former resolution opposing the dumping of toxic waste from other states into the State of South Carolina and opposing the further operation of a toxic waste dump at Pinewood, South Carolina; that the South Carolina Medical Association vigorously opposes the practice of accepting all toxic and other waste from other states, territories and countries; the South Carolina Medical Association vigorously opposes these practices by whatever means available in order that the public health of the citizens of our state not be placed in jeopardy"; and

WHEREAS, The Sumter-Clarendon-Lee Medical Society has suggested ways these resolutions might be implemented; and

WHEREAS, The Board of Trustees of the South Carolina Medical Association has studied the issue, and in September of 1986 carried the motion that "The SCMA encourages the State of South Carolina to (1) increase funding to DHEC to provide the necessary monitoring of hazardous waste facilities; (2) encourage companies involved in hazardous waste disposal to move toward newer technologies, such as incineration, as alternatives to underground storage; and (3) also encourage the Governor to establish a master plan for surveillance and regulation of all hazardous waste disposal and transportation in South Carolina"; and

WHEREAS, The landfill on Lake Marion continues to operate under GSX, a private company, accepting three hundred thousand pounds of hazardous waste annually from some 26 states; now, therefore, be it

RESOLVED, That the South Carolina Medical Association endorses again the previous resolutions of 1985 and 1986, and the previously adopted motion by its Board of Trustees in September, 1986 and that the President of SCMA be directed to implement these in a timely fashion.

SUBMITTED BY: *Sumter-Clarendon-Lee Medical Society*
SUBJECT: **AIDS AND THE PUBLIC HEALTH**

WHEREAS, Over one million people in the United States are infected with the HIV (AIDS) virus and may develop "full blown AIDS" and die a horrible death in the next several years; and

WHEREAS, AIDS is such an under-reported disease process since only stage three is included in the reporting criteria of the CDC (even though those with the asymptomatic first stage and those with the second stage comprising "AIDS related complex" (ARC) and the "AIDS-induced brain syndrome" are able to infect others with the virus); and

WHEREAS, Sixty-nine to sventy-five percent of the cases of those with AIDS in the United States are male homosexuals and this group has a very high visibility and clout politically, bringing tremendous pressure to bear to blunt any reasonably prudent public health measures; and

WHEREAS, There is no known immunization or treatment or a vaccine to combat this extremely complex virulent lentivirus; and

WHEREAS, This virus has been known to survive up to ten days in dry form at room temperature; and

WHEREAS, The treatment of third stage AIDS is a potential threat to the entire health care delivery system expecting to require eight to sixteen billion dollars in terminal stage management by 1992, mainly from Medicare and Medicaid; and

WHEREAS, All modes of transmission have not been satisfactorily delineated for this disease as yet; be it

RESOLVED, That the South Carolina Medical Association go on record as realizing the dire public health threat this disease poses; and be it further

RESOLVED, That we urge the South Carolina Medical Association to bring all its collective resources to bear to: 1) educate the public as to the possible epidemic or pandemic which may ensue over the next decade, and 2) lobby the legislature to enact laws which will require the reporting the incidence of this disease in all three stages, mandate premarital testing for the AIDS virus, and direct DHEC to require the same type contact investigations for AIDS patients as they currently require for the other less lethal sexually transmitted diseases; and be it further

RESOLVED, That we, in the medical profession, respect this disease for the real medical menace that it is and resist the pressure groups who are attempting to make this horror into a mere political issue.

OLD BUSINESS

POSTPONED DEFINITELY SCMA CONSTITUTION FROM THE 1986 HOUSE OF DELEGATES

The following proposed amendment to the SCMA Constitution was presented at the 1986 Session of the House of Delegates and has thereby been postponed definitely for the required eleven (11) months prior to final action by the House of Delegates. This is presented for final adoption at the 1987 Session as follows:

3.00 BOARD OF TRUSTEES. The Board of Trustees shall be elected by the House of Delegates as provided for in the Bylaws, and will carry out the policies of the House between meetings of the House, and shall have authority over all of the subsidiary organizations, as well as other duties outlined in the Bylaws. The composition of the Board will be as outlined in the Bylaws.

Respectfully submitted,
O. Martin Burton, M.D.,
Speaker of the House of Delegates

SPECIAL GUEST: WILLIAM S. HOTCHKISS, M.D. PRESIDENT-ELECT, AMERICAN MEDICAL ASSOCIATION

William S. Hotchkiss, M.D., a thoracic surgeon from Chesapeake, Virginia, was elected President-Elect of the American Medical Association at its Annual Meeting in June, 1986.

Since his election to the AMA Board of Trustees in 1978, Doctor Hotchkiss served as its Chairman, 1985-86, as its Vice Chairman 1983-85, and as Secretary-Treasurer of the Association and Secretary of the Board 1980-83. He is also an AMA Commissioner to the Joint Commission on the Accreditation of Hospitals.

Before his election to the Board, Doctor Hotchkiss served as a Delegate to the AMA House of Delegates 1974-77. He was also President of the Norfolk Academy of Medicine 1965-66, and President of the Medical Society of Virginia 1971-72.

Born in Waco, Texas, Doctor Hotchkiss received his B.S. degree from McMurry College in Abilene, Texas, where he received the Distinguished Alumnus Award in May, 1985. He earned his M.D. degree at the University of Texas Medical School in Galveston. After interning at the Henry Ford Hospital in Detroit, Doctor Hotchkiss served from 1941-46 in the U.S. Public Health Service, the U.S. Coast Guard, and the U.S. Navy. Following World War II, he did his residency training in general surgery at the Henry Ford Hospital in Detroit where he also started his training in thoracic surgery. His residency was completed at the Veterans Hospital in McKinney, Texas. Doctor Hotchkiss is a Diplomate of the American Board of Surgery and the American Board of Thoracic Surgery.

Doctor Hotchkiss is a Past President of the medical staff of Leigh Memorial Hospital in Norfolk where he is currently a member of the attending staff. He is a Consultant and former Chief, Department of Thoracic Surgery, at the Norfolk General Hospital, and Consultant to the Veterans Hospital, Kecoughtan, Hampton, and the Maryview Hospital in Portsmouth. He is on the attending staff at Chesapeake General Hospital, Norfolk.

Doctor Hotchkiss' first scientific paper was published in 1944 and appeared in the *Virginia Medical Monthly*. Other papers have been published in the *Journal of the American Medical Association* and the *American Journal of Surgery*.

Doctor Hotchkiss and his wife, Virginia, reside in Virginia Beach.

EXHIBITORS FOR 1987 SCMA ANNUAL MEETING

1. DHEC Office of Public Affairs
2. Roper Hospital
3. S. C. Organ Procurement Agency
4. S. C. Handicapped Services Information Systems
5. USC School of Medicine
6. American Cancer Society; S. C. Affiliate
7. S. C. Vocational Rehab. Disability Determ. Div.
8. DHEC Bureau of Laboratories
9. S. C. Regional Transplantation Services
10. S. C. Health Information Network
11. Center for Cancer Treatment and Research at Richland Memorial Hospital
12. S. C. Consortium of Community Teaching Hospitals
13. & 14. SCMA Risk Management Program
15. MUSC Alumni Association
16. First Capital Leasing and Investment Corporation
17. Dial Page
18. Hoechst-Roussel Pharmaceuticals
19. & 20. Eurosport AMG, Ltd.
21. & 22. G. Geisler Group
23. Medical Marketing Enterprises
24. Mead Johnson Nutritional Division
25. & 26. Medical Management Business Centers, Inc.
27. Kane Office Technologies
28. United States Navy
29. Roerig-Pfizer
30. Crystal Communications Corporation
31. South Carolina Federal
32. Whitehall Laboratories
33. Wallace Laboratories
34. Dupont Pharmaceuticals
35. Medical Protective Company
36. Bristol Laboratories
37. Fenwick Hall
38. Carolina Physicians Advisory Service
39. H. Jack Free Advisory
40. Refreshments
41. United States Air Force
42. Bruce Hall — Center for the Treatment of Alcohol & Drug Dependency
43. Rorer Pharmaceuticals
44. Key Pharmaceuticals, Inc.
45. Boehringer Ingelheim Pharmaceuticals, Inc.
46. Parke Davis
47. Flint Laboratories
48. S. C. Army National Guard
49. & 50. Winchester Surgical Supply Company
51. Wyeth Laboratories
52. Medfax Corporation
53. Smith Kline & French
54. & 55. Companion Technologies
56. Pfizer Laboratories
57. Counts Rescue Equipment Company
58. The Upjohn Company
59. I. C. System, Inc.
60. Transworld X-Ray Corporation
61. INMED Diagnostics
62. McNeill Consumer Products
63. B & B X-Ray
64. U. S. Army Professional Support Agency
65. Miles Pharmaceuticals
66. Merck Sharpe & Dohme
67. Refreshments
68. Boehringer Manneheim Diagnostics
69. Lederle Laboratories
70. & 71. CompuSystems
72. Charter Rivers Hospital
73. Medical Payment Systems
74. Abbott Laboratories

ACKNOWLEDGMENTS

The SCMA Committees on Continuing Medical Education and Planning State Meetings are grateful to the following companies who are sponsoring speakers: Pfizer Laboratories, Companion Technologies, The Upjohn Company, CompuSystems, Roper Hospital, Glenbrook Laboratories, Carolina Physicians Advisory Service and Hoechst-Roussel Pharmaceuticals; and to Charter Rivers Hospital and South Carolina Federal who are sponsoring coffee breaks. Special appreciation is also extended to Pfizer Laboratories, the Center for Cancer Treatment and Research at Richland Memorial Hospital, Dial Page, Kane Office Technologies, Eurosport AMG, Ltd., Jack Krawcheck, and First Capital Leasing and Investment Corporation for contributions towards the Friday evening reception.

In addition, again this year, we appreciate Mead Johnson Nutritional Division's organizing and providing prizes for the golf tournament.

Editorials

Although only 105 cases of AIDS, and 638 cases of human immunodeficiency virus (HIV) infection, had been reported in South Carolina through the end of 1986, all observers predict steady progression of this major epidemic. A full morning's symposium at this year's annual SCMA meeting dramatizes several of the many emotionally charged issues confronting us. High among these issues is that of sex education in our public schools. As this issue was going to press, I was preparing a lengthy editorial on the need to place sex education within the framework of a comprehensive, mandatory program of both health and lifestyle education for our secondary school students. Almost simultaneously, the following thoughtful editorial was submitted by one of our past presidents, Dr. Donald Kilgore. Agreeing completely with his positions, I deemed it fitting to expedite publication of this timely message in our annual meeting issue.

— CSB

Guest editorials reflect the opinions of the authors and do not necessarily reflect the position of the Editorial Board or the South Carolina Medical Association.

SEX EDUCATION — A PATH WITH PITFALLS

Sexual education in our public schools will provoke spirited debate in the next few years. Faced with a rapidly increasing rate of illegitimate pregnancy, particularly teenage pregnancy with its high emotional and financial cost, as well as South Carolina continuing to be a perennial contender for the U.S. venereal disease championship; sexual education was mandated in our public schools, although the method was left up to local option. There are still a few adherents to the three monkey school of thought (speak no evil, hear no evil, see no evil) who argue that the more you teach children about sex, the more promiscuity there will be. However, as a pathologist who continues to see Papanicolaou smears on pregnant 10, 11, and 12-year-old girls, I believe this viewpoint is untenable. People with this viewpoint also need to know that in certain neighborhoods in South Carolina, as well as the rest of the nation, a girl who is still a virgin past the age of 10 and not pregnant by the age of 13 is considered an oddity by her peers. Similar peer pressure is exerted on the boys. Desirable as it is, the moral virtue of abstinence is not going to work in these neighborhoods.

As a member of a county school board which is reevaluating its courses in sexual education, I have had occasion to reexamine my own thoughts on this subject. Books and methods of instruction may vary, but I believe there are five fundamental essentials: (1) Comprehensive sexual education for our children is necessary, but it should include the advantages of abstinence without preaching. (2) Information never hurts anyone, but it should be factual without being emotional. (3) The teacher is overwhelmingly important. He or she should be knowledgeable, calm, and nonjudgmental. (4) The sexes should be separated. For some young people this is a painfully embarrassing subject, and the presence of the opposite sex would make it almost unbearable. (5) Permission to attend these classes should be positive. No one should be admitted to these classes without written permission from the parents. It is not sufficient to send a note home saying that unless the parents object, their child will join the class on sexual education. Most experienced parents know that such a note sent home in the pocket of a young boy usually winds up in the washing machine rather than in his parents' hands.

Although sexual education should be as complete as possible, I believe it is essential to inform children that abstinence is a normal, healthy, and rational choice — free of the many potential and existing disadvantages incurred by those who choose premarital sex. Because "freedom" is such a catch word used by those who are in favor of premarital sex, I'd like to point out six freedoms that abstinence provides. (1) Freedom from unwanted pregnancy. (2) Freedom from possible complications that may occur from the "pill." (3) Freedom from venereal disease which can be crippling or even fatal. (4) Freedom from the effects of losing procreative powers from those who elect sterilization by operation and those sterilized by venereal disease. (5) Freedom from the potential complications of abortion. (6) Freedom from the emotional trauma which may descend on families when an unmarried daughter becomes pregnant and the responsible son and she may have to debate the question of a premature marriage.

In addition to these six freedoms there are three other worthwhile thoughts: (1) Recognition that no studies have shown that premarital sex improves marriage and/or marital sex. (2) Development of self discipline through abstinence is a trait that is needed in every other aspect of everyday living. (3) Abstinence is the least expensive method of birth control — it's absolutely free.

However, I do believe there are some limits to sexual education. My nausea titer rose last fall when I read in the *AMA News* that the Minneapolis Department of Health is sending a messenger dressed in a red, white, and blue silk suit called "Captain Condom" around to all the gay bars to distribute condoms and pamphlets on AIDS — a sort of fairy Santa Claus. A debate flares concerning the propriety of supposedly "tasteful" TV ads for condoms. A station in San Francisco (naturally) was the pioneer of such ads. Some networks and stations are presently debating the acceptability of such ads. Some have rejected them. But after nearly 40 years of practice, I believe I recognize a trend when I see one. The thinking behind this ad campaign is definitely late twentieth century modern. Sex poses manifold dangers to society — teenage pregnancies, a multiplying welfare population, AIDS, herpes, *et cetera ad nauseam.* With "safe sex," the dangers would disappear. The wider use of prophylactics would permit safe sex. Therefore we should advertise them. QED. Old fashioned commercial zeal mingles with newfangled concern for the unwed mother and the AIDS sufferer. The prophylactics industry — is that the usual term? — would like to make some money out of all this social tribulation. Anyhow, this is the way the debate is framed — safe sex versus unsafe sex. On this side, the unwanted baby or the incurable plague; on that side, the condom. Take your pick.

What you never would suspect by eavesdropping on the debate is the existence of a third alternative — moral responsibility — meaning adherence to the ancient moral law. Meaning, in daily practice, sex within marriage instead of outside — the normative prescription of all history's great societies, bar none.

I will admit that moral responsibility is no easy thing to discuss. Having anything and everything at all times is the modern ethos. Responsibility means sometimes *not* having something dearly sought; or anyway not having it right that minute. The have-it-all philosophy of the sexual revolution revolves around him who has it — majestically isolated from others, responsible exclusively to himself. Responsibility implies the existence of others to whom responsibility is owed — family, church members, community, *et cetera.*

Interestingly enough, the safe sex argument demonstrates the bankruptcy of lemme-have-it-all-right-now. "Safe sex" is called responsible sex, insofar as it involves a commitment not to communicate AIDS to one's "partner." All of this is very thoughtful as far as it goes; but it really doesn't go far. Why should society presuppose that the sexual revolutionaries have won — and that moral responsibility has become the hollow shell they make it? What is wrong with a social commitment to moral responsibility? What is wrong with spokesmen for society maintaining that just as particular things are right, so are other particular things wrong?

How much more to the point than condom ads would be public service messages — sponsored by, say, the United Ministries, the PTSA, Planned Parenthood, Rotary, saying — listen, stop, think; morality only seems dead; in fact it remains, as always, an intensely practical creed. The way not to contract AIDS or bear children out of wedlock is not to do the things that result in AIDS or illegitimacy. Perhaps public service announcements are beyond hope. But there are other ways to communicate the message. I would think, for instance, if the modern clergy dwelt more on moral responsibility and less on economic policy and political action, their efforts would bear some fruit. As all parents know, the hardest thing is to be a good example. Take for example, the talented athlete who has ruined his life with drugs. Very likely, his parents set a good example by fixing his traffic tickets and bullying any teachers who thought education was important and implied that he didn't have normal responsibilities because he was better than other children. His coach implied that he was better than other people by encouraging him to cripple quarterbacks or wide receivers under the euphemism of "hard nosed football." The alumni lavished gifts on him saying "never mind the rules, that's for suckers!" The university president and faculty encouraged him to take empty or remedial courses to exploit his talents while he was still eligible and then kicked him out without a degree or any hope when his time was up. Kids like this have learned a lesson that is taught only too well by adults. But the adults still are surprised and shocked when it happens! "What is wrong with this younger generation?" they scream in anguish.

Morality has gotten a bad rap in the twentieth century. I am afraid one good reason is the defective way the moral message is often presented by its bearers. Around the turn of the century, drinking and dancing and card playing were enough to send a young fellow to hell. As for s-e-x! Boy, wash your mouth out with soap!

The action itself, not the heavily documented consequences of similar actions, was what the neopuritans loved to dwell on and shout about at the top of their ample lungs. A thing was immoral because it was immoral.

On the other hand, to be charitable, probably there was no way of foreseeing how many wrecked homes and wrecked lives would one day be attributable to lemme-have-it-all-right-now. We have to live it to understand it — is that the way? Well, we have lived it, that is for sure. The sexual revolution, as is typical of all revolutions, has devoured its children — millions and millions of them who imagined a life lived without restraints and without obligations to the "partners" they chose.

Not long ago Dr. Otis Bowen, the Secretary of Health and Human Services, predicted that AIDS would become the modern black plague. You will remember the black plague wiped out about one third of Europe's population around 650 years ago. Syphilis, that second great discovery of Columbus, had a more insidious but almost equally devastating effect on Europe about 500 years ago. For the past six years, the number of reported cases of AIDS has doubled each year. If it continues at the present rate, the entire population of the United States will be affected before the twenty-first century arrives. Maybe TV ads can save us, but somehow I doubt it.

— DONALD G. KILGORE, JR., M.D.
8 Memorial Medical Court
Greenville, S. C. 29605

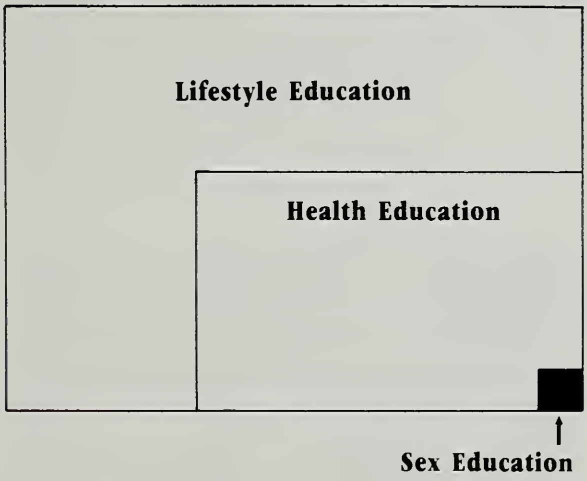
COMPREHENSIVE HEALTH/LIFESTYLE EDUCATION IN THE SECONDARY SCHOOLS . . . AN IDEA WHOSE TIME HAS COME?

As Dr. Kilgore observes in the preceding editorial, AIDS is not the only unhappy by-product of sexual activity among our high school students. For years, South Carolina has ranked among the leading states in the incidence of sexually-transmitted diseases. Worse, approximately 5,000 South Carolina schoolgirls between the ages of 14 and 17, and approximately 100 between the ages of 10 and 13, become pregnant each year. Over 80 percent of those who drop out of school will fail to complete their education. The projected 10-year public sector cost for each year's cohort of teenage mothers and their first-born babies exceeds $125,000,000.

A bill being drafted for our General Assembly to amend the code of laws of 1976 would increase the extent of comprehensive health education in South Carolina. This bill would again mandate comprehensive health education between kindergarten and the eighth grade. The draft stipulates that "at least one time during the four years of grades 9-12, each student must receive instruction in reproductive health education and, at the discretion of the local board, instruction in family life education or pregnancy prevention education." The bill would leave considerable discretion to local school boards, who could choose their own instructional materials "addressing the subject of reproductive health education, family life education, and pregnancy prevention education."

The drafted bill provides that "health education for students in grades 9-12 may be given as part of an existing course or as a special course." This may be a step in the right direction, but hardly seems strong enough. At the present time, fewer than five percent of our secondary school students are receiving *any* type of health education course. Is there not a compelling need for our educators to formulate a comprehensive curriculum?

For years, the SCMA has strongly advocated the need for comprehensive health education in our schools (one recalls, for instance, that it was a dominant theme during Dr. Harrison Peeples' presidency). *Sex education should be taught as part and parcel of a comprehensive program in health education.* Further, as Dr. Kilgore suggests, students also need to receive a framework within which to make moral and ethical decisions. Therefore, why not teach health education only as part and parcel of a comprehensive program in *lifestyle education* (Figure).



Although health education is an important component of *lifestyle* education, the latter curriculum should also include other topics (for instance, the framework for making ethical and moral decisions). Sex education should include both health education and also other components of the lifestyle education curriculum. Note that sex education, although important, is a relatively small part of the lifestyle education curriculum — despite publicity to the contrary.

It has been clearly demonstrated that school health education promotes healthy behavior.[1] As Dr. Kilgore suggests, it has not been demonstrated that education about the anatomy, physiology, and complications of sex promotes promiscuity (for the record, one poll of sexual activity according to occupation indicated that physicians — who know all about these matters — have the poorest sex life; firemen had the best). We must not allow the emotionally-charged issue of sex education to divert the public's attention from the broad need for education about healthy lifestyles. We must encourage our legislators to pass a stronger bill. We must assist our educators in the drafting of an appropriate, broad-based curriculum.

— CSB

REFERENCE

1. The effectiveness of school health education. Morbidity and Mortality Weekly Report 35: 593-594 (September 26, 1986).

ON THE COVER: AN OUNCE OF PREVENTION

Medical history buffs and others interested in the "tools of the trade" used by our medical ancestors will enjoy the superb exhibit of medical memorabilia and artifacts on display at the Charleston Museum. The display is being extended so that participants in the annual South Carolina Medical Association meetings in Charleston will be able to enjoy this work. This collection demonstrates a large inventory of practical instruments used by doctors and dentists who practiced their professions during the nineteenth century in South Carolina.

The photograph on the cover shows part of the collection. What follows herein is largely taken from the exhibit labels. Many of the items displayed are on loan from the Waring Historical Library of the Medical University of South Carolina in Charleston.

Through the years this editorial series has presented the faces, the families, the changes and the philosophies which contributed so much to the "pictorial history of medicine in South Carolina." Much of what follows has been touched upon in previous cover stories; some will be saved for the future.

Charleston, typical of many seacoast cities of the nineteenth century, was frequently the unwilling host to numerous epidemics brought to the coastline by merchant sailors. The influenzas, dysenteries, yellow fevers, and other infectious diseases were relatively common but their etiology was unknown. Typically physicians resorted to the old standbys of purging, sweatings and bleedings in an attempt to provide relief for the infected. Because the diseases were not understood, the treatments were frequently without benefit. The exhibit demonstrates the philosophy of prevention. Of importance was the progress made in the early part of the nineteenth century when leaders in the South Carolina medical profession determined to establish a State Board of Health and to begin medical licensure. The beginning of the South Carolina Medical Association also occurred in the mid-nineteenth century as well as the establishment of the Medical College at Charleston. With increased understanding and awareness, more and more useful tools were introduced and physicians were able to more adequately control the diseases that affected our population.

Because access to medical care was so frequently limited by distances, it was typical of families to have medicine chests. In many cases the plantation owners performed services in lieu of physicians in their attempt to maintain their household of family and slaves. Depicted at the bottom of this editorial is a medicine chest owned by planter and attorney Horace Hann Sams of Beaufort County. It is mahogany and was used by the family in the 1860's. Additionally, medicine chests belonging to Joseph Ellison Adger of Woodlawn Plantation near Pendleton, Samuel DuBose, a wealthy planter from Berkeley County and the Aiken family in Charleston are depicted and on display in the exhibit. The latter is also part of the collection of The Aiken-Rhett House, a museum in Charleston.

In the museum exhibit there is the casebook used by Robert L. Brodie, M.D., while an intern at Bellevue Hospital in New York during the 1850's. Dr. Brodie served in the U. S. Army but at the outbreak of hostilities of the Confederate War he left the U. S. service to become Medical Director of the Confederate Army under General Beauregard. He later served as President of the Medical Society of S. C. in Charleston and served as surgeon for the United Confederate Veteran's Camp Sumter.

Another item on display is the prescription book of J. A. Mayes, M.D., which contains many of the treatments given to the patients he attended when he settled at Mayesville, South Carolina, following four years of service as a physician in the Confederate Army. Dr. Mayes made many contributions to the medical literature and, because of his interests in botany, determined the sedative properties of the Indian pokeberry plant and suggested this as an anesthetic. An early President of the South Carolina Medical Association, he was previously depicted on the cover of this journal.

There is a mahogany medicine chest shown with its compartments and drawers for holding medical tools and medications. There is a secret compartment in the rear containing poison and lethal drugs. Within the exhibit there is an interesting report from an 1847 manual on "Inflammation of the Brain." It stated that symptoms of the above disease include intense pain in the head, eyes incapable of varying light, flushed face, delirium, oppression of the breast, hard pulse and a fiery red tongue. It stated that the causes of this "inflammation of the brain" include excessive heat, blows to the head, intemperance and, interestingly, the intense application to study.

There is also a surgical instrument case belonging to Isaac W. Angel, M.D., who graduated from the Medical College at Charleston in 1855. Other instruments including the dental and medical instruments of Dr. F. F. Gary, of Cokesbury, South Carolina, are shown. Dr. Gary was also a former President of the South Carolina Medical Association and was featured on the cover of this journal. Likewise, the wooden case with nineteenth century thermometers owned by Dr. T. Grange Simons (also a former SCMA President and subject of a cover story) are shown. A very interesting magnetoelectric machine for the treatment of nervous diseases is in the exhibit. This instrument belonged to Charleston physician, Robert Lebby, M.D. Dr. Lebby was the subject of a cover story for this journal and upon the cover of that issue was a desk belonging to Dr. Lebby which had been made by the slaves on Jehossee Plantation and presented as a gift to one of South Carolina's royal governors. A beautiful walnut medicine box with satinwood inlay and brass fittings has been donated and demonstrated in the exhibit. Dr. Joseph Caine, a physician who practiced in Pinopolis, South Carolina, used the cupping outfit on display in the exhibit. The velvet vest which hangs in the exhibit was owned by Morton Waring, M. D., who practiced medicine in Pineville, and there is also a medical box belonging to Henry M. Holmes, M.D., who practiced mid-nineteenth century medicine in Charleston. His instruments were made by a Charleston smith, Henry D. Reinhardt, in the 1850's. Obstetrical and gynecological instruments owned by Dr. Richard Y. Dwight are shown and include forceps, curette, vectis and placenta forceps. There is displayed also a Sims speculum developed by South Carolina's own J. Marion Sims.

The rich long history of South Carolina medicine and her medical men is only partially told. The tale is incomplete but many chapters can be added if those fortunate families who possess knowledge or artifacts of early South Carolina physicians will share them with us.

— Thomas M. Leland, M.D., Ph.D.

SOUTH CAROLINA MEDICAL ASSOCIATION

AUXILIARY

HIGHLIGHTS: ANNUAL REPORT OF THE PRESIDENT

"Love Can Make The Difference" has been the theme of the 1986-1987 SCMA Auxiliary year. Emphasis of the Auxiliary this year has been on supporting the work being done at the grass roots level, where the love of your spouses for you and your community is making a difference in the quality of life around you and your family. A brief summary of this year's activities is described in this report.

Medical Society/Medical Auxiliary Cooperative projects: The auxiliary president has compiled a list of projects and programs depicting the coordination of activities of the county medical auxiliaries and their component county medical societies. Copies of this report were sent to the SCMA President, President-Elect, and Chairman of the Board of Trustees. All organized county auxiliaries have implemented various cooperative projects. Further information on all county projects can be found in the Annual Reports of each individual county auxiliary printed in the convention program of the Annual Meeting.

Prevention of Teenage Pregnancy Program: At the beginning of the 1986-87 year, the SCMA Board of Trustees requested that the SCMA Auxiliary become involved actively in the program of the prevention of teenage pregnancy, primarily by supporting the efforts of the local medical societies and the state medical association. This has been accomplished in various ways: (1) 26 teenage pregnancy prevention projects have been implemented by 16 county auxiliaries; (2) the program "Understanding a Major Health Problem of South Carolina: Prevention of Teenage Pregnancy" was presented at Winter Board by nationally known speakers who emphasized the postponing of sexual involvement for teens; this meeting was supported financially by SCMA, SCMAA, and various pharmaceutical laboratories; (3) audio tapes on the medical pitfalls of teenage pregnancy by Otis Bowen, M.D., Secretary of Health and Human Services, were obtained from Washington, D.C. They were screened and approved by the SCMA Board of Trustees. Distribution was made to county auxiliaries in each region, and they have been played regularly all year on local radio stations throughout the state; (4) the "Postponing Sexual Involvement" (PSI) kit was ordered from the Medical College of Georgia; the kit includes teaching materials, workbook, and tapes; (5) the "You Can Say No: Teenagers — Don't Be Pressured Into Sex" kit was received from the Medical Association of Georgia for use by county auxiliaries; (6) auxilians in some counties are working as volunteers in health departments, teaching patients in prenatal and family planning clinics; (7) presidential citations will be given at the Annual Meeting to each county auxiliary which implemented a teenage pregnancy prevention project; (8) the Executive Board unanimously passed the following resolution,

> "that the SCMA Auxiliary join with the SCMA to support comprehensive health education in schools as recommended by the AMA, the S.C. Statewide Health Coordinating Council, Primary Care Task Force, and the Governor's Task Force on Teenage Pregnancy Prevention, and further that this education be properly funded by the state for school districts."

Auxiliary President at Board of Trustees Meetings: The president has regularly attended the meetings of the Board of Trustees; auxiliary input was welcomed.

SCMA Officers and Staff at Auxiliary Meetings: The state officers and staff of SCMA participated in all three Auxiliary Executive Board meetings and gave update information on SCMA activities at each meeting.

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NEONATAL SCREENING FOR SICKLING HEMOGLOBINOPATHIES IN SOUTH CAROLINA: CAN THE PROMISE BE FULFILLED?[*]

G. S. PAI, M.D.[**]
PATRICIA M. HOUSER, M.S.

Homozygous sickle cell disease (HbSS), sickle cell-hemoglobin C disease (HbSC) and sickle-beta thalassemia (HbS-beta-thal) are the most common sickling hemoglobinopathies in the South Carolina population. Nearly 10 percent of all infants with HbSS will get pneumococcal sepsis during the first three years of their lives.[1] The 25 to 35 percent mortality associated with sepsis in HbSS can be reduced considerably if early detection, parent education and penicillin prophylaxis are implemented.[2-4] During its 1986 Session, our State Legislature amended Section 44-37-30 of the Code of Laws of S. C. pertaining to neonatal screening for inborn metabolic diseases. The amendment directs the Board of Health and Environmental Control to prescribe, by July, 1987, the rules and regulations by which every infant born in the state is to be screened for hemoglobinopathies.

This review focuses on the various components of this new screening effort. The pivotal role of the primary care physicians and the need for interactions with the public health network and community-based sickle cell counseling groups are reviewed on the basis of our experiences during a two-year pilot study.

WHY SCREEN NEWBORNS?

The advantages of newborn screening for sickling disorders are similar to those advocated for phenylketonuria and hypothyroidism. The availability of an inexpensive and reliable screening method, adequate time for confirmatory testing and institution of therapy prior to onset of complications and a captive population make neonatal screening efficient. Alternate strategies such as screening during infancy or selective screening of targeted sub-populations of children on the basis of race or family history will not detect a significant proportion of infants early enough to prevent death from sepsis. Screening all newborns including those in low-risk groups adds only nominal laboratory costs while avoiding logistical problems of selective screening.

THE LOGISTICS OF SAMPLE COLLECTION AND TESTING

All initial testing is centralized to the State Bureau of Laboratories: Initial screening tests include cellulose-acetate electrophoresis at alkaline pH, followed by citrate agar electrophoresis at acidic pH on selected samples. This procedure has been found reliable in detecting the two most common major mutant hemoglobins, i.e., HbS and HbC.

These tests, done on filter-paper samples routinely collected for PKU and T$_4$ screening, are reported to the physician of record and the hospital of birth along with PKU and T_4 results. Physicians need to be aware that simple or exchange transfusions will negate the results of neonatal testing for hemoglobin disorders. The laboratory slip should be carefully marked with this information to avoid confusion. Transfused infants should be tested at two months of age.

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Parents objecting to testing their infants on religious grounds are allowed to do so. This information should also be communicated to the laboratory.

INTERPRETATION OF INITIAL TEST RESULTS

The electrophoretic separation of normal and mutant hemoglobins on gels permits a semi-quantitative estimate of the various components normally present in the neonate. The results reported as FA indicates no abnormality. The FF pattern is usually seen in premature infants. The production of S, C or A hemoglobin may not have begun in these infants. They should be tested when two months old. FAS and FAC patterns indicate heterozygosity or carrier state for the respective mutations.

By far, the most significant results are FS and FC indicating homozygosity for the respective mutations. The FSA (as opposed to FAS) pattern indicates greater quantity of HbS than HbA. Sickle-beta thalassemia should be considered in these infants. FSC indicates HbSC disease. It is imperative that all infants with FS, FC, FSC or FSA patterns undergo retesting as early as feasible. This confirmatory testing should include quantitation of various hemoglobins, complete blood counts including red cell indices and similar studies on both parents.

FOLLOW-UP, COUNSELING AND PENICILLIN PROPHYLAXIS FOR SICKLING DISORDERS

As might be anticipated, an initial abnormal result indicating a serious disease generates considerable anxiety in the parents. Its manifestations may include denial, hostility or disbelief and lead parents to be reluctant to follow requests for retesting. The normal appearance of the infant, usually negative family history, lack of knowledge of the inheritance pattern and misconceptions about the trait and disease states complicate counseling. The initial FS pattern predicted sickle cell disease in 80 percent of our patients. The natural clinical variability of the sickling disorders, the ameliorating effects of concomitant heterozygosity for hereditary persistence of fetal hemoglobin and the inability to predict S-beta-thal without testing both parents should temper medical prognistication.

When the ideal work-up is not feasible, the infant should be started on prophylactic penicillin therapy (125 mg p.o. bid) and retested when six months old. It is known that the increased risk of overwhelming sepsis and sudden death are present even in asymptomatic infants with sickling disorders regardless of HbF levels.[2] Penicillin prophylaxis is recommended for at least the first three years of life.[2] Pneumococcal vaccine and hemophilus influenza vaccine should also be considered. These vaccines do not confer total protection.[3]

An important part of counseling parents is emphasizing the necessity of prompt medical attention for any febrile illness. Parents should be taught how to record rectal temperatures and given an emergency telephone number for all times of the day and night since temperatures exceeding 101°F require evaluation.

COUNSELING FAMILIES OF INFANTS WITH TRAITS (HETEROZYGOSITY)

Virtually all infants with HbS and HbC trait will be identified during the screening process. Even though the primary goal is to identify infants with disease states, the important concurrent benefits to be obtained from family studies and genetic counseling of trait carriers should not be forgotten. Such efforts in due course will identify a large segment of the population at risk without implementing mass screening.

Extended family studies may be difficult or impossible to accomplish in a fee-for-service, private-practice setting. Community-based sickle cell counseling groups and local health departments can provide this service efficiently. Families should be encouraged to utilize these resources. Family studies and genetic counseling for appropriate relatives can be incorporated into the routine of well-baby care.

ANTICIPATED PROBLEMS

(1.) False positive and false-negative test results: The predictive power of the FS pattern in our study was 80 percent. The false positive rate of 20 percent is considerably lower than it is for the

PKU program. The frequency of false negative results is unknown. High-risk infants should be retested if there is reason to suspect that neonatal testing was non-informative. Fewer than anticipated number of infants in our study had the FSA pattern suggesting that some S-beta-thal infants are likely to be missed.

(2.) Retesting and Family Studies: Considerable effort was required in retesting non-private-care infants in our study. Families were reluctant to keep their appointments in spite of written and telephone contacts and our offer of free service. After evaluation and counseling, compliance with follow-up visits and penicillin prophylaxis was better than average. While the reasons for this behavior are unclear, the need for persistence in making the initial contact with the families is certain.

(3.) Access to medical care: This key component of the screening program is likely to present a significant barrier to full realization of the benefits of early detection. In our study, 90 percent of infants with a hemoglobinopathy were medically indigent. Improving their access to health care should be a priority of the physicians, public health officials and legislators.

(4.) Medico-legal concerns: Physicians who attend newborns will be responsible for initial contact with parents of infants with a sickling disorder. As in PKU and T_4 screening, continuing care is likely to require intervention by multiple sources of health care. The difficulties we encountered in tracking non-private-care infants at-risk indicates a potential problem for hospitals and physicians taking care of medically indigent newborns. The importance of developing an efficient tracking system using the public health network cannot be over-emphasized.

(5.) Informed consent: The law mandates screening all newborns following the precedent set for PKU and hypothyroidism in this and most other states. The benefits outweigh the risk of harm to children in high-risk groups since testing is done on blood samples already obtained for other mandated tests. However, informing parents about the nature of the tests to be done on their infants has significant advantages. Simple disclosure forms or pamphlets can be used to educate parents during prenatal visits. This is likely to diminish anxiety when the results are given, and increase public awareness and support for the program.[6]

SUMMARY

Neonatal detection of infants with sickling disorders can be accomplished with relative ease. The promise implicit in such efforts is the reduction of high infant mortality in these disorders. Can this promise be fulfilled? In our pilot study in a restricted geographic area of the state and in statewide programs in other parts of the country, it was possible to do so when sufficient financial resourses were committed and educational efforts implemented.[7] As we get started with statewide screening in South Carolina, a dedicated effort is needed to fulfill this promise. Colleagues interested in additional data or references to pertinent literature are invited to contact the authors at the Department of Pediatrics, Medical University of South Carolina, Charleston 29425. ☐

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NAVY DOCTORS LEAD THE ADVENTURE

IMPACT OF FIRE ANT STING MORBIDITY IN SOUTH CAROLINA*

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Physicians are increasingly aware of the serious clinical aspects of fire ant stings. We have documented the current problem in South Carolina by a morbidity study of these events. The data indicate that we have a serious problem throughout our state.

The red imported fire ant (RIFA) *Solenopsis invicta* Buren, entered the U.S. from South America in 1918 at the port of Mobile, Alabama,[1] advancing to South Carolina in 1952.[2] RIFA infestations have slowly and steadily spread from two counties in 1952 (Charleston and Orangeburg) to 27 counties in 1973[3] to full-or-spot infestations in all 46 counties in 1986.

The RIFA is of concern to both rural and urban populations because it displaces other less toxic ant species and because of its aggressive behavior. These insects create multiple painful stings which may lead to complications such as anaphylaxis in sensitized persons[4] and even death.[5-7] Attack to pets and livestock and damage to agricultural equipment from RIFA mounds have also been reported albeit not well-documented.

Lawrence, et al[3] reported the first morbidity study for fire ant stings in South Carolina. Their survey of 1,726 physicians covered a three-year period (1970-1972) and reported a total of 1,088 cases which included 69 cases of anaphylactic shock, 330 lesser allergic reactions and 145 complications based upon a 59 percent response rate.

METHODS

Questionnaires were mailed to 1,996 primary care physicians whose specialty included general practice, pediatrics, allergy, internal medicine, family practice, emergency and occupational medicine as listed in the 1985-86 Directory of the State Board of Medical Examiners of South Carolina.

The questionnaire asked the physician to estimate the number of patients seen *during the past year* for fire ant stings. A breakdown as to the clinical aspects of the stings was requested. Local reactions and their complications as well as generalized constitutional reactions were recorded. The location of treatment was also requested, i.e. office visit, emergency room, hospital or patient's home. If only telephone advice was given, this too was documented. Space was provided for detailed description of the doctor's most serious case.

RESULTS

A 50.7 percent survey response rate was achieved, with 1,012 physicians reporting 12,127 RIFA sting cases during a specified twelve-month period.

Table I summarizes the cases by severity and level of treatment. Patient contacts for *acute stings* provide the majority of cases (66 percent) with almost half of these being telephone consultations. Severe *local reactions* due to RIFA stings, including secondary infection yield 23 percent of all cases with 1,726 patients treated in the office. An additional 474 patients were treated in emergency rooms or required hospitalization. Eleven percent of the total cases were patients who experienced *systemic allergic reactions*. Of the patients in the allergy category, 48 percent (633) were prescribed epinephrine self-medication kits, but only 11 percent (141) received fire ant desensitization injections.

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Although no deaths were reported by the physicians, 13 "near-death" cases were described in detail. Each case experienced anaphylactic shock in which the physician used the term "near-death," or the patient's blood pressure was recorded as 60-50/0 or less, or there was no pulse at the time of initial treatment.

Table II lists the reported RIFA cases by county of practice of the reporting physician. It is recognized that some cases may reside outside the county of practice. Richland County accounts for 30 percent of the total cases. Five leading counties (Richland, Charleston, Lexington, Florence and Horry) provide 7,912 cases or 65 percent of the total. Two physicians responding for McCormick County and ten for Laurens County had no cases to report. Twenty-seven of the state's 46 counties each report less than one percent of the total cases. Low morbidity from counties (predominant in the Piedmont) agrees with the relative frequency of RIFA infestation.

In Table II, fire ant sting rates per 10,000 population for office visits, emergency room visits and hospitalizations (excluding telephone consults) are listed by county. Rates range from 82.7 for Richland County and 80.8 for Lee County to 0.4 for Oconee and Greenville Counties. Statewide, the rate is 22.1 cases per 10,000 population based on the projected 1985 population. When rates are calculated as cases per reporting physician per county, the geographic pattern remains consistent with RIFA infestation in South Carolina.

DISCUSSION

Previous studies[8, 9] reported that less than five percent of the population stung by fire ants actually seek medical consultation or care. Based upon this estimate, approximately 500,000 fire ant sting incidents occurred during the 12-month period of this study.

If only five percent of the population stung by fire ants receive medical assistance, what is the estimated cost for RIFA-medical care? Using conservative costs, *1.8 million dollars* were spent last year. This includes 0.4 million dollars for emergency room visits and hospitalizations, 1.0 million for prescribed medications, proprietary medications, self-injection kits and desensitization antigens, and 0.4 million for office visits and professional fees.

Although no deaths were reported in the survey, it is reasonable to assume that deaths[5-7] have occurred in South Carolina as a result of RIFA stings, but have not been detected. A death certificate search by the South Carolina Department of Health and Environmental Control failed to find any deaths during the survey period "due to insect stings or bites."[10] Patients who either (a) have anaphylaxis to unknown agents, (b) have unexplained sudden death or (c) "probable" myocardial infarction or stroke could be victims of fire ant stings.[5]

What does the physician of first contact need to know regarding RIFA stings? He needs to recognize the unique aggressive behavior (attack), toxicity (venom) and the antigenicity of the protein constituting the body of the insect. Not only is the pustule (surrounded by erythema) histologically

TABLE I

South Carolina Physician Survey of Fire Ant Sting Morbidity, 1986

	Severity of Cases			
Level of Treatment	*Acute*	*Complication*	*Allergy*	*Total*
Hospital	23	41	58	122 (1%)
Emergency Room	1,071	433	490	1,994 (16%)
Telephone Consultation	3,704	626	212	4,542 (38%)
Physician's Office	3,171	1,726	572	5,469 (45%)
	7,969 (66%)	2,826 (23%)	1,332 (11%)	12,127

TABLE II

Cases of Red Imported Fire Ant Stings, Complications and Allergies in South Carolina by County, 1986

Abbeville	34 (14.2)[*]	Greenwood	12 (0.8)
Aiken	97 (4.8)	Hampton	41 (7.8)
Allendale	76 (54.5)	Horry	654 (30.6)
Anderson	71 (3.1)	Jasper	17 (5.0)
Bamberg	74 (30.2)	Kershaw	54 (9.0)
Barnwell	16 (4.7)	Lancaster	34 (3.0)
Beaufort	339 (26.2)	Laurens	0 (0.0)
Berkeley	34 (2.5)	Lee	220 (80.8)
Calhoun	15 (3.9)	Lexington	916 (38.3)
Charleston	1,932 (35.4)	McCormick	0 (0.0)
Cherokee	39 (4.4)	Marion	218 (43.8)
Chester	61 (16.1)	Marlboro	3 (0.6)
Chesterfield	6 (0.7)	Newberry	169 (25.6)
Clarendon	56 (13.5)	Oconee	6 (0.4)
Colleton	149 (34.5)	Orangeburg	525 (41.6)
Darlington	564 (56.1)	Pickens	8 (0.8)
Dillon	71 (19.4)	Richland	3,690 (82.7)
Dorchester	182 (10.4)	Saluda	13 (0.6)
Edgefield	175 (73.4)	Spartanburg	63 (2.1)
Fairfield	115 (32.5)	Sumter	171 (10.8)
Florence	720 (32.2)	Union	37 (7.1)
Georgetown	162 (18.3)	Williamsburg	238 (33.8)
Greenville	23 (0.4)	York	27 (1.2)

[*] Rates for medical treatment excluding telephone consultations per 10,000 population.

unique, the venom is 99 percent piperidine and only one percent protein. Antigenically, the venom plus the protein from RIFA rubbing its abdomen on the wound provokes a systemic response in about one to two percent of humans. It provokes an exaggerated local response (edema) for another 15 percent while the remainder of victims (approximately 80 percent) have localized, sterile pustule reactions. While data have shown a difference between adults and children in Hymenoptera (bee, wasp, yellow jacket and hornet) reactions, no such conclusions have been drawn in RIFA stings.

Anyone reacting to a fire ant sting with IgE — mediated hives or swelling distant from the site of sting is in the high-risk anaphylaxis category (one to two percent of the population). Although skin tests and RAST tests including other Hymenoptera allergens may be studied later in the victim, the *clinical history alone* warrants prescription of emergency self-administered epinephrine (with physician-signed permission letter). Next, referral to an allergist for desensitization series is indicated. Sole dependence on epinephrine prophylaxis is not adequate as the anaphylaxis may be so sudden as not to allow time for the epinephrine to be effective. RIFA-specific desensitization has a high success rate.

Complications for RIFA stings include toxicity from large numbers of bites, secondary infections and tissue necrosis from impaired blood flow requiring skin grafts, especially in diabetics and persons with circulatory disorders.

Education of land and home owners and environmental control of RIFA mounds is the obvious long-term goal to reduce human cases. Without control measures physicians may expect increased numbers of patients as RIFA infestation increases. This is especially true in those counties which have enjoyed low RIFA sting rates in the past.

SUMMARY

Venom of the red imported fire ant (RIFA) is unique in the biologic kingdom. Its health effects are documented by 1,012 physicians who reported treatment of 12,127 cases during a specified twelve-month period. Differential diagnosis of RIFA stings includes: (1) simple acute stings, (2) exaggerated local reactions, and (3) systemic allergic reactions. Anaphylaxis-prone persons need to be identified and protected promptly. As fire ant colonies multiply in all 46 counties of the state, physicians will be called upon for emergency treatment. Citizens will need to manage RIFA infestation according to Clemson University guidelines. □

ACKNOWLEDGEMENT

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PERFORATION OF MECKEL'S DIVERTICULUM BY FOREIGN BODY

DOUGLAS W. STOKES, JR., B.S.
HARRY B. GREGORIE, JR., M.D.*

Meckel's Diverticulum, a congenital anomaly resulting from incomplete dissolution of the vitelline or omphalomesenteric duct, is often described by the "rule of twos." Present in approximately two percent of the population, the diverticulum is usually about two inches in length, and is located approximately two feet from the ileocecal valve on the antimesenteric border of the terminal ileum. For unknown reasons, Meckel's Diverticula are more common in males.

Meckel's Diverticulum is the most common congenital anomaly of the gastrointestinal tract, and many potential complications have been described. These include hemorrage, obstruction, diverticulitis, umbilical discharge, perforation with ensuing peritonitis, Littre's hernia, ileal intussusception, the presence of foreign bodies, and both benign and malignant neoplasms. Bleeding is the most common complication reported, and Meckel's Diverticulum is responsible for nearly half of all gastrointestinal bleeding in children. The diverticulum may contain heterotopic gastric or pancreatic mucosa, and these diverticula are much more likely to become symptomatic.[1]

Dr. Charles W. Mayo has noted that "Meckel's Diverticulum is frequently suspected, often looked for, and seldom found."[2] It is the purpose of this presentation to report the fifth case of foreign body perforation by vegetable matter, and to suggest that Meckel's Diverticulum should continue to be suspected and looked for.

CASE REPORT

A fifteen-year-old white male was admitted for evaluation of lower abdominal pain in August, 1986. The pain had begun 36 hours earlier, with the entire lower abdomen being uncomfortable. The patient had the urge to defecate, but did so without relief. He noted malaise and anorexia. He had difficulty sleeping the night prior to admission due to the pain. He preferred not to move, but when walking, did so bent forward and to the right. He denied nausea or vomiting, and on admission reported that he was hungry, but that the pain had not subsided. There was no history of injury or trauma, or exposure to noxious agents. The parents noted that the patient had swallowed a foreign body about two weeks prior to admission, a portion of a whistle containing plastic and metal. To their knowledge, the foreign body had not been passed in the stool.

Previous medical history was significant for an episode of febrile diarrhea two years ago with improvement after hospitalization. The patient was on no medications. Family history and review of systems were non-contributory.

On physical exam, the patient was found to be a well-developed, well-nourished white male in mild acute distress. Pulse was 88, respiration 20, blood pressure 110/70, temperature 99.6. The abdomen was scaphoid, and no masses were palpated. The patient preferred not to move, with all motion such as sitting, walking, and pelvic shift causing pain. Psoas and obturator signs were negative. There was both voluntary and involuntary guarding in the right lower quadrant. The lower abdomen was tender, maximally in the right lower quadrant, but also in the midline and somewhat in the left lower quadrant. Direct and referred rebound tenderness to the lower abdomen were present. Peristalsis was virtually absent. The patient was tender on rectal exam on the right side, but also anteriorly.

Complete blood count showed hemoglobin 14.7, hematocrit 41.3, 5.21 million erythrocytes, white count 8,400 with 64 percent granulocytes, 28.2 percent lymphocytes, and 7.7 percent monocytes. Urinalysis was negative. Flat and upright films of the abdomen were normal, with no evidence of free air or foreign bodies. Chest x-ray was within normal limits.

Right lower quadrant laparotomy was conducted through a Rocky-Davis muscle splitting incision. There was a collection of serous fluid within the peritoneal cavity. At a distance of approximately two feet, a broad-based, 3½cm Meckel's Diverticulum was located. There was no gross evidence of heterotopic gastric mucosa. The diverticulum was acutely inflamed, and a perforating foreign body was noted. The diverticulum was resected, and the ileum closed. The post-operative course was uneventful and the patient has continued to do well.

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Pathologic examination of the appendix showed minimal inflammatory changes with peri-appendicitis. The Meckel's Diverticulum measured 3.5cm in length and 0.8cm in diameter. It was grossly inflamed, and there was a foreign body measuring 0.9 x 0.5 x 0.4cm protruding from the tip. Microscopically, the diverticulum was lined by normal ileal mucosa which was ulcerated in one area. An inflammatory infiltrate was present. The foreign body was sectioned and determined to be vegetable fiber (See Figures 1 and 2).

DISCUSSION

Many cases of foreign body perforation of Meckel's Diverticulum have been reported, with fish bones being the most common. Three were cases of perforation by tomato peel,[3, 4, 5] with one case of perforation by cabbage stalk.[6] In our case, the pathologist felt certain that it was a vegetable fiber of some type.

Symptoms resulting from the Meckel's Diverticulitis can be indistinguishable from acute appendicitis. Since most Meckel's Diverticula are located near the cecum, pain is often noted in the right lower quadrant near McBurney's point. Even at operation, the two entities may be difficult to distinguish. Nordback and Matikainen[7] have described a case where a grossly inflamed appendix was removed from a patient with symptoms of acute appendicitis. Histologic examination of the appendix revealed that the seromuscular layers of the appendix were severely inflamed; however, inflammation in the submucosa was minimal, and the epithelium was intact. The patient's condition did not improve after appendectomy, and re-laparotomy revealed an abscess around the perforated Meckel's Diverticulum. This phenomenon has been termed secondary appendicitis or periappendicitis. A similar situation existed in our case; however, exploration of the terminal ileum eliminated the need for relaparotomy.

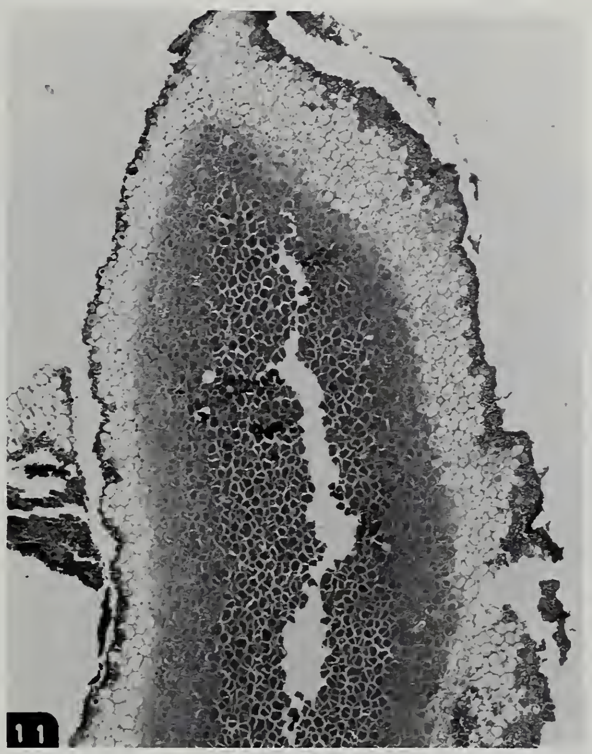

FIGURE 2. Microscopic section of vegetable fiber.

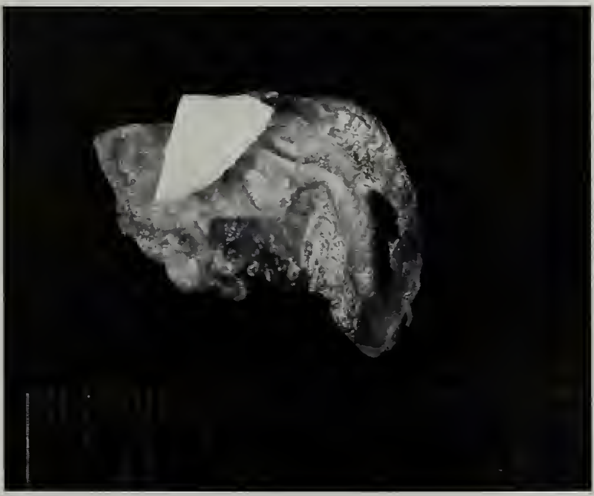

FIGURE 1. Meckel's Diverticulum, sectioned longitudinally, showing vegetable fiber. Scale is in centimeters.

There are clinical features which can aid in differentiating Meckel's Diverticulitis from acute appendicitis. Patients with acute Meckel's Diverticulitis often have pain which is poorly localized and diffuse. The point of maximum tenderness is often located more medially than in acute appendicitis. Patients with acute Meckel's Diverticulitis often have symptoms of small bowel obstruction resulting from intussusception or edema of the diverticulum.[1] Our patient was maximally tender in the right lower quadrant, yet his pain was diffuse, with pain in the midline and the left lower quadrant as well. There was right-sided rectal tenderness, but tenderness anteriorly also.

Our patient gave a history of ingesting a metal-containing foreign body, but this was not visible on abdominal x-ray. It is important to inquire about a history of foreign body ingestion in patients, particularly children, with abdominal pain. Foreign body perforation of Meckel's Diverticulum is much rarer than foreign body perforation of the appendix, presumably because most Meckel's Diverticula are wide-mouthed, which allows objects to move in and move out again.[6]

Although rare, this is the third case of foreign body perforation of Meckel's Diverticulum which we have encountered. In one previous case,[8] a splinter perforated a Meckel's Diverticulum and impaled the trigone of the bladder, causing pain at micturition which radiated down the shaft of the penis. We are aware of two other cases locally for which the records cannot be located.

During appendectomy, it is advisable to explore three feet of terminal ileum, except in cases of peri-appendiceal abscesses or suppurative appendicitis. This is particularly important when only peri-appendicitis is found, or when there is a history of foreign body ingestion.

SUMMARY

Although rare, foreign body perforation of Meckel's Diverticulum does occur. The fifth case of perforation by vegetable matter is presented. The similarity of acute Meckel's Diverticulitis and acute appendicitis is noted, and potential differentiating features are reviewed. Exploration of the terminal ileum is advised during appendectomy unless the operative field is grossly contaminated. ☐

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YELLOW FEVER AT MT. PLEASANT, CHARLESTON HARBOR, S. C. IN 1857, WITH A REVIEW OF ITS CONSEQUENCES

WALTER BONNER, M.D.*

Mother often told me that my great-great-grandfather died in a Yellow Fever epidemic at Mt. Pleasant, S. C. in the 1850's. The story was that Samuel Herd Lofton was in the business of selling beef to ships at anchor in Charleston harbor, that he had caught the disease on an infected ship at quarantine, and that he had brought the fatal infection home to his wife and two of his six children. Lately, I was interested to read a more complete account of the Loftons' confrontation with Yellow Fever.

Dr. Robert A. Kinloch wrote: "On Monday, the 21st of September, 1857, I was requested to visit Mount Pleasant to see, in consultation with one of the physicians of that place, Mr. Lofton, who was said to be ill with 'bilious congestive fever;' and also to take charge of a son of Mr. Lofton's, who had been taken sick the night before with the same disease. I was informed, before reaching the town, that there had been four deaths in quick succession in Mr. Lofton's household — his wife, two children, and a servant had fallen victims to the disease. Knowing the healthfulness of the place, this news rather surprised me; but still I went, expecting to see bilious remittent fever existing upon one of the suspicious spots upon the land-side of the town. First, I was surprised to find the sickness in a central portion of the settlement; and next, upon entering Mr. Lofton's room, I was more than astonished at the appearance which he presented. The surface of his body was quite yellow; the conjunctivae of an orange hue; bloody sordes was about his teeth, and bloody crusts at the corners of his mouth, a blistered surface upon the abdomen had apparently been oozing blood; he was in a state of restless delirium; he hiccoughed often, and seemed disposed to vomit; his bladder was empty, although he had passed no urine for over twelve hours. I was informed that his intellect had been clear up to a short time previous to my visit. I watched this man for some time, expecting to see black vomit come from his stomach. I wanted no more perfect picture of the third stage of Yellow Fever. My suspicions were roused, and I determined to seek an opportunity the next day to make an autopsy, and see how far the internal and external appearances corresponded with each other. Upon my visit to the son, on Tuesday morning, I learned that Mr. Lofton had died the evening previous. Consent being obtained, I proceeded to make an autopsy, examining only the abdominal organs, as my time was limited. The stomach was found to contain nearly half a pint of black vomit; the mucous membrane of this organ was congested in patches, and at some points presented the peculiar dark color which might lead one to say that the black matter was traceable into the vessels. The intestines, both large and small, contained some black matter. The liver was most decidedly of the 'yellow' or 'buff color' described by Louis. The bladder was empty and contracted. The other abdominal organs presented nothing peculiar. To one conversant with the pathological appearances presented after death, from Yellow Fever, I need scarcely say that my first suspicions were amply corroborated, and I felt little hesitation in deciding that Mr. Lofton died of Yellow Fever."[1]

Dr. Kinloch's announcement of Yellow Fever in Mt. Pleasant alarmed a community which to that time had escaped every assault of the disease on the seaboard. When he soon concluded that the epidemic of 41 cases was not imported but was locally generated he set off an angry exchange of medical articles and public comment between himself and Dr. William Hume, a "contagionist" and an advocate of seasonal embargo of ships engaged in the West Indian trade.

Dr. Robert Alexander Kinloch (1826-1891) was, at the time of his visit to Mt. Pleasant, a physician in private practice in Charleston, S. C. and an attending of the surgical ward at Roper Hospital.[2]

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He had obtained his medical degree at the University of Pennsylvania in 1848, and then spent two years in further training in Paris, London, and Edinburgh before returning to Charleston. Later, after serving as a surgeon in the Confederate Army, he became chairman of Principles and Practice of Surgery at the Medical College of the state of South Carolina and, finally, Dean of the Faculty of that school. He was a founder of the American College of Surgeons, was an Associate Fellow of the College of Physicians, served a term as president of the Medical Society of South Carolina, and was for some years after the Civil War an editor of the Charleston Medical Journal. His colleagues considered him a decisive and bold surgeon and his case reports reveal him to have been a compassionate physician.

Dr. Kinloch realized the potential importance of study of an epidemic of Yellow Fever in a small community of 1,200 people. In his first publication on the subject in January, 1858, he wrote, "I conceive this epidemic (if it can be so called) of Yellow Fever to be far more interesting to the profession, and to the community of our city (Charleston), than any visitation of the disease that the city herself has ever sustained. A careful investigation of the origin of Yellow Fever upon this new and contracted spot may decide questions that have long been agitating our community, and concerning which a truthful decision is of immense importance to our future welfare."[1]

Dr. Kinloch spoke of the disease as being caused by the "Yellow fever poison — the living germ" and by the "Morbific material — the germs, if this term be better liked." He asked, "How did this disease come to prevail at Mt. Pleasant? This brings up the old disputed question of foreign importation and domestic generation."

After identifying his original case as Yellow Fever rather than Malaria, Dr. Kinloch observed and treated others in the Lofton household plus several in nearby homes. He sought out and questioned physicians of the community and became convinced that other cases had occurred.

Table I shows the sequence of cases as determined by Kinloch. His account stops short of listing all cases, saying that a report by a special commission would have greater detail (unfortunately that manuscript has not been found). He does state that there were 41 cases of Yellow Fever, with 11 deaths, six of whom had black vomit. The epidemic lasted almost two months with mortality being greater among the earlier cases. Most affected persons were strangers, unacclimated to the seaboard, or were children. The majority of the cases occurred not in houses on the waterfront, but on the second row, being concentrated near a home owned by a Mr. Morrison. For several years this dwelling had had "a bad reputation," as a number of people had taken sick there. Kinloch stated that several of them had symptoms and a course consistent with Yellow Fever. The Loftons had rented and lived in this house until two days before the first person — the infant — became ill, when they moved into a new house of their own.

Dr. Kinloch considered first the possibility that Yellow Fever was brought to Mt. Pleasant by personal transmission or on inanimate objects. He found that cases of Yellow Fever had occurred in two vessels — The Ciscar and the Johannes — while they lay close together in quarantine anchorage (see Table II). In addition, two cases occurred aboard the San Juan two days after she left quarantine and took a position in Hog Island Channel, closer to Mt. Pleasant but even closer to the city of Charleston (Figure 1). The San Juan had also been beside the Ciscar while in quarantine. Dr. Kinloch learned that the corpse of one who died aboard the San Juan was accidentally lost overboard in Hog Island Channel with 350 pounds attached when a small skiff overturned while trying to get out to sea.

A rumor that Mr. Lofton had visited the Ciscar was discredited. That Mr. Lofton had visited two other vessels in quarantine (The Koophandel and The Olympe) was established, but there were no cases of Yellow Fever on those. Rumors that sailors from ships in quarantine had illegally visited Mt. Pleasant were not substantiated. The finding of a ship's mattress on the waterfront at Mt. Pleasant was not considered significant. Dr. Kinloch was satisfied that the disease was not carried to Mt. Pleasant by persons or by fomites.

Dr. Kinloch looked into the possibility that the disease might have been transmitted by air from the infected vessels to Mt. Pleasant. The prevailing southwesterly winds could have carried germs from vessels anchored in Hog Island Channel, but he thought this unlikely since the riverfront houses were not affected. He considered it significant that Mt. Pleasant had been spared from previous epidemics, during which infected ships had been in many parts of the harbor.

TABLE I

Cases of Yellow Fever as Recorded by Dr. Kinloch

		ONSET	OUTCOME
The Lofton Household:			
Infant — George E.	Age 1 or 2	Aug. 21	Died Aug. 24
Son — Joe	Age 8	Sept. 8	Recovered
Servant — Mary Ann	Age unknown	Sept. 8	Recovered
Servant — Joe	Age unknown	Sept. 9	Died Sept. 11 Black vomit
Son — Robert G.	Age 6	Sept. 10	Died Sept. 18
Mrs. Lofton (Susan Ann)	Age 38	Sept. 11	Died Sept. 14 Black vomit
°Mr. Lofton (Samuel Herd)	Age 38	?	Died Sept. 21 Black vomit
°Son — John	Age 12	Sept. 20	Recovered
°Daughter — Jenny	Age 4	Sept. 23	Recovered
Son — Henry Michael	Age 17	Not at home initially, not affected	
Daughter — Mary Ann	Age 10	At home — not affected	
One visitor to the home became ill and died inland, date unknown.			
"Several other persons" became ill but recovered.			
In Other Homes:			
°Mr. Aldrich	Age unknown	Aug. 28	Died Sept. 6 Black vomit
Two Aldrich sisters	Age unknown	?	Both recovered
°Miss Gregorie	Age 3 or 4	?	Died Sept. 26 Black vomit
°Miss Tew	Age 15	Sept. 24	Died Sept. 27 Black vomit
°Miss Pooser	Age unknown	Sept. 25	Recovered
Mr. Whitesides	Age unknown	?	Died, date not stated

°Cases seen and managed by Dr. Kinloch

Lastly, Dr. Kinloch studied the topography and cleanliness of the Morrison House, the Loftons' new home, and the village as a whole. The entire village was on high, well drained land, but the Morrison House was on a point of natural depression. He found "no filthy accumulation and no putrid odors" there or at the Lofton home. He did note that in the village "There has been evinced a disposition to divide the lots, and to build more closely, as the land has become more valuable." He found brush heaps and rotting logs in many lots, plus many heaps at places where marshland was being reclaimed.

He concluded, "So far as my information enables me to form an opinion, I believe the disease to have been of local origin," and, he warned, "If the people of Mt. Pleasant want a city, they must have it with a city's ills."

A Rebuttal. Dr. Kinloch's published report of January, 1858 was not only a dispassionate rendering of facts and opinions regarding Yellow Fever. It was a polemic against Dr. William A. Hume, who believed Yellow Fever to be exotic to the United States and who had already let it be known that he disagreed with Kinloch's belief that the disease was of local origin.

Dr. Hume (1801-1870) graduated from the College of Physicians and Surgeons in 1820 and obtained further training, including work in natural history, in Paris and London.[2] He practiced medicine in Charleston but, being an academician at heart, quit practice in 1845 to become Professor of Experimental Sciences at the Citadel Academy. He taught chemistry and physics. He is said to have had a distinctly non-military bearing and was excused from military exercises.[3] Dr.

TABLE II

YELLOW FEVER IN CHARLESTON HARBOR, 1857

	CISCAR	SAN JUAN	JOHANNES	KOOPHANDEL	ADELLA	LOUISITA	OLYMPE	CARACTACUS
Port of Origin	Havana	San Juan	Emden, Germany	Rio	Havana	San Juan	Guadeloupe	?
Arrival	July 8	July 12	July 26	June 27	July 31	July 26	Aug. 30	?
	Arrived with 4 sick of Yellow Fever 3 sick previously At quarantine 7 other cases Aug. 17 allowed to anchor in Hog Island Channel opposite Bennett Wharf	At quarantine until Aug. 27 (near the Ciscar from July 12 to Aug.17) Aug.27 - to Hog Island Channel 2 cases of Yellow Fever there 1) ? Sept.1 2) Sept. 3 Case 1 lost overboard Case 2 buried at sea	2 of crew died en route of "ship fever" (Typhus) 2 died at quarantine of Typhus Quarantined until Aug.17 Aug. 24 to Ashley River There 2 men became sick on Aug. 25 Diagnosed Yellow Fever Both died at the Pest House	Quarantined Had had several cases of Yellow Fever in Rio No cases at sea or in Chas. Harbor Lay beside Johannes for 6 days (Aug.11-17) To Ashley River on Aug. 17 Lofton visited on Sept. 3	Quarantine To port Sept. 12 No cases	Quarantined To port Sept. 4 No cases	Had 10 cases at the previous port None active Remained at quarantine until sold, departed. Lofton visited on Sept. 3	Close to Koophandel & Johannes at quarantine Left on Sept. 16 3 cases occurred subsequently

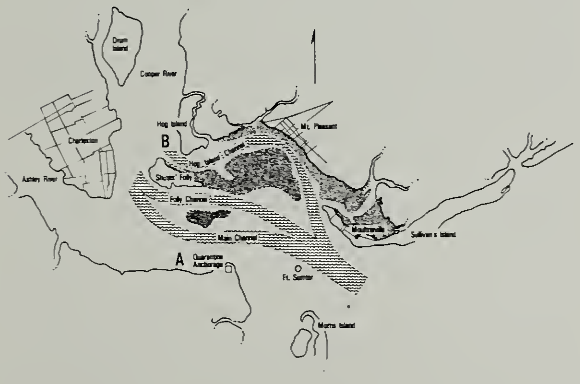

FIGURE 1. Charleston Harbor, 1858. From a chart of Charleston Harbor and its approaches, by the Superintendent of The Survey of the Coast of the United States, 1858. The quarantine anchorage was located at point A. After leaving quarantine the Ciscar and the San Juan likely anchored at point B, "in Hog Island Channel opposite Bennett Wharf."

Hume was twice elected to the city council of Charleston and was Alderman at the time of the Yellow Fever outbreak in Mt. Pleasant.

For years before the Mt. Pleasant epidemic, Dr. Hume advocated embargo of West Indian trade during the months of danger. He wished to "make it (Yellow Fever) a stranger to our homes and our cherished city, by opposing every barrier to its entrance and making every exertion to its exclusion."[4] He, and a vocal minority before him, believed that each epidemic of Yellow Fever in the area could be traced to arrival of infected vessels from the West Indies or South America.

When Dr. Kinloch made a preliminary report on the epidemic to the monthly meeting of the Medical Society of South Carolina on October 1, 1858, Dr. Hume challenged his conclusions.[1] Later, Hume also spoke against Dr. Kinloch's ideas in remarks made before the City Council of Charleston.[5, 6] Dr. Hume visited Mt. Pleasant to talk with laymen and physicians concerning the epidemic. He made an exhaustive study of the movement of vessels in the harbor. He was convinced that Yellow Fever came to Charleston

Harbor aboard the Ciscar, was transferred to the San Juan while the two vessels were "lashed together" in quarantine, and then was transmitted by air to Mt. Pleasant while the San Juan was anchored in Hog Island Channel.

The two men exchanged ideas and insults in successive issues of the Charleston Medical Journal over the next year.[4, 5, 7, 8, 9, 10] It is obvious that Dr. Kinloch chafed under criticism by Dr. Hume but, although he lapsed into petty argument several times, he generally attacked Hume with understatement and satire, poking fun at Hume's wordiness. Kinloch was well familiar with the cell theory which was being established in that decade, and with the concept of spontaneous generation of infective agents. In this argument he believed himself to be on the side of scientific medicine, and he suggested that Dr. Hume was behind the times.

Dr. Hume did not think so, and his works show he was up to date on medical science. He was the more bookish of the men. He wrote long articles with long sentences and paragraphs, but his works were well-summarized and were concluded with strong recommendations.

Kinloch said he found it necessary to "record my dissent from the conclusions in regard to the origin of Yellow Fever in our locality arrived at by the distinguished professor, who has frequently, during the last five or six years, favored your readers with voluminous articles upon the subject of this disease." Hume said that Kinloch accepted the idea of spontaneous generation of Yellow Fever on faith and "is ready to reject the truth than to abjure the faith."

Both men declared themselves to be activated by the highest motives. Kinloch was "conscious of the mightiness of truth" . . . and would "endeavor to do my duty." Dr. Hume said he believed that "to be ever active in laudable pursuits is the distinguishing characteristic of a man of merit." It is significant that neither man accused the other of having any commercial interest influencing a stand on quarantine, although it seems such interests prevailed at the time.[11]

A Side Issue. A dispute over proper terminology caused much of the continuing disagreement. It seems that Dr. Kinloch had delivered to Dr. Hume a specimen of black liquid obtained at autopsy from Mr. Lofton's stomach. Having examined it chemically and microscopically, Dr. Hume expressed the opinion that the material was from the stomach of an "old alcoholic." When advised that Mr. Lofton was a non-drinker and had fever and icterus, and not being told that other cases had occurred, Hume said it was likely that the case represented "Imitative Yellow Fever." Hume had, in previous articles, described a small number of cases of a fever with icterus and black vomit but not associated with an epidemic. These had all the essentials of Yellow Fever, he said, but could not be Yellow Fever since they were not propagated.

Dr. Kinloch declared that if a case has all the features of Yellow Fever it must be just that and nothing else. He claimed that the occurrence of sporadic cases proved the point of local generation. Hume replied in carefully worded terms that he intended the "imitative" label to mean that these cases resembled Yellow Fever in clinical manifestations but were fundamentally different. Both men, incidentally, showed a clear understanding of the various fevers known to occur in the southern United States: Malaria, Typhoid, Typhus, Dengue, and pneumonia.

The two sniped at each other over several other issues — whether the Ciscar and the San Juan were close enough to Mt. Pleasant to constitute a danger, whether Mr. Lofton could have brought the disease back from a visit to some vessel, and whether the Lofton's infant, who had taken sick before the San Juan arrived in Hog Island Channel, had died of some disease other than Yellow Fever. Dr. Hume favored these ideas but Dr. Kinloch disbelieved them. The physician who attended the infant had told Hume the infant died of some other disease, but later wrote to Dr. Kinloch that the subsequent events made him realize the child died of Yellow Fever.

Neither of the men changed his mind but both softened their rhetoric with time. Kinloch said it was "time the debate must end," and "I agree with my opponent that controversy should have its limits. I am willing to let our little difference stop here, provided my friend is not disposed to revive it." He also said he regretted having to "wound the self-esteem of one whom, but for truth's sake, I would gladly let believe that 'Full surely, his greatness was aripening.' "

Hume wrote, "Personal polemics are as disagreeable to authors as they are unpleasant and unprofitable to readers," and "I deeply regret that duty compels me to appear as an opponent to my friend."

In the end, Kinloch remained of the opinion that, "as yet, there is not a semblance of reason discoverable in any argument that has been advanced to prove the introduction of Yellow Fever into Mt. Pleasant."

Hume ended his series of articles by saying, "I have failed to find any local cause at the village adequate to engender a case of Yellow Fever."

These were not the last writings on the subject by the two authors, but their later works made no mention of a continuing dispute between them.

In 1860, Dr. Hume published another long and detailed analysis of the relationship of West Indian commerce to Yellow Fever in Charleston Harbor.[12] He recalled the 1857 epidemic in Mt. Pleasant and stated, as if it were an established fact, that the disease had been brought to the village by the San Juan.

Dr. Kinloch wrote once again in 1878, twenty years after his original publication, saying that the origin and mode of propagation of Yellow Fever are "still unsolved problems in medicine."[13] He used the term "infectious diseases" to refer to what in the past had been called "fevers" and he spoke of the agent of Yellow Fever as a "peculiar germ, or fungus." Kinloch told his readers that they should "remember our ignorance of the essential cause of the disease, or even of the special form of matter in which this exists, or the laws that govern its movement."

Did They Accomplish Anything? Yellow Fever attacked the City of Charleston in 1862, 1864, and 1865, the episodes being related to the arrival of blockade runners.[2] Occurrences were fewer in the postwar era, and the last significant epidemic affected Charleston in 1876.

A small outbreak took place in Mt. Pleasant in 1876 or 1877, probably the former. We know of this only by an undated report to Mt. Pleasant City Council submitted by Dr. P. B. Bacot, Secretary of the Board of Health at that time.[14] Dr. Bacot said that the disease spread through the village with "unpittiable malignity" and continued until "almost every home on the beach side of the village had been visited and one or more of its inmates taken away." As to the cause of the disease, Dr. Bacot lamented, ". . . it is a hidden cause, something known only by its effects, impalpable, invisible, distinct from the causes of ordinary diseases; a something divine; a something emanating from the bowels of the earth." Dr. Bacot recommended perfect cleanliness in and about residences, a thorough system of drainage, the free use of disinfectants, and said, "above all, let there be no more cutting and piling of weeds during the summer months."

In an October, 1857 report to Charleston City Council, Mayor William Porcher Miles said it was "hard to decide what to do about quarantine when members of the medical profession violently disagree as to its merit."[15] He did emphasize efforts to improve drainage and sanitation in the city.

In June, 1858 the Medical Society of South Carolina unanimously (Dr. Hume being absent) passed a resolution supporting a city ordinance "prohibiting the piling up of rice chaff, sawdust, or offal of any kind."[16] The resolution stated "There is no room to doubt that the diffusion and progress of all epidemics and the origin of many of them are due, at least in part, to the presence of such a state of atmosphere, as is generated by the decomposition of those animal and vegetable matters, which are enumerated in the ordinance." The resolution further stated, "that in order to improve the standard of health in Charleston, it will be necessary to combine a rigid system of sanitary regulations with any quarantine laws that may be adopted." Dr. Kinloch took this action by the Medical Society to be a vindication of his viewpoint.

Following a major epidemic in the City of Charleston in 1858 the mayor appointed a committee of physicians to advise the city regarding quarantine. Drs. Robert Leahy, James H. Taylor, E. Lafitte, and H. T. Peake reported as follows: "On the last point, viz: The alteration or amendment of the quarantine regulations, the committee beg to state, they are not prepared to suggest any alteration at this juncture."[17]

The Charleston area was relatively free of Yellow Fever during the last 35 years of the century. Indeed, no cases of Yellow Fever occurred in South Carolina after a small epidemic struck Port Royal in 1877. Dr. Leon Banov, Charleston County Health Office, in 1932 attributed the successful avoidance of the disease to the work of his predecessor port physicians and health officers who "kept stricter adherence to quarantine regulations and who employed sanitation and drainage in the community."[18]

Thus, by such means, prevention of Yellow Fever may have been accomplished during the very years (1875-1900) that pioneering work in microbiology was done by Koch and Pasteur, before Manson in 1881 demonstrated transmission of filariasis by insects, and before Dr. Walter Reed demonstrated propagation of Yellow Fever by the mosquito at the turn of the century. If so, the conscientious debate of Drs. Kinloch and Hume, by keeping the subject before their fellow physicians and the civil authorities, was not in vain.

What if? The two doctors were in the mainstream of medical thought in the 1850's. They were experienced clinicians capable of differential diagnosis of disease — they studied disease by the most up-to-date methods: microscopy, chemical analysis, and autopsy — they were proponents of the cellular theory and the germ theory — they had great powers of description. That they were confused and frustrated in studying Yellow Fever is understandable, now that we know more about microbiology and about insect vectors.

As I read their articles I felt sorry that my mother did not know of these reports, which contained much more information than her orphaned ancestors could pass on to the family. I also found myself regretting that the doctors did not have the satisfaction or embarrassment of seeing their ideas confirmed or disproven. I wished that they had advanced knowledge by making some crucial observation on Yellow Fever — that they, rather than Walter Reed, had had the benefit of Koch's and Pasteur's work and had become famous as conquerors of Yellow Fever.

But — I thought — if they are watching us now they are probably wishing we would spend our time and energy debating the etiology or pathogenesis of disease rather than agitating over the spread of HMO's. ☐

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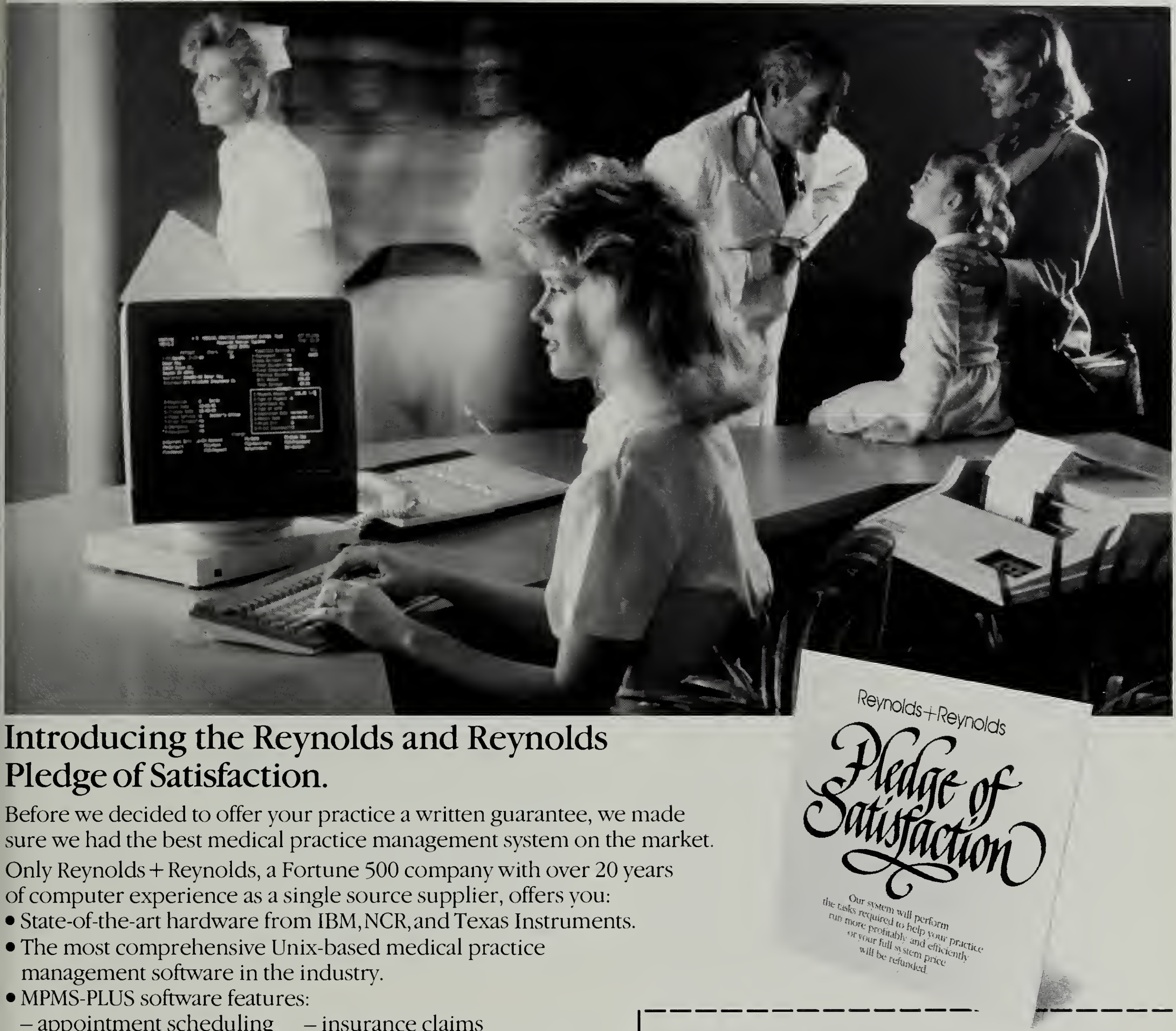
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Editorials

NEWBORN SCREENING FOR METABOLIC DISORDERS

On July 1, 1987, the Department of Health and Environmental Control (DHEC) will add hemoglobinopathy detection to the screening program for South Carolina newborn children. The Bureau of Laboratories presently screens these infants for phenylketonuria and hypothyroidism.

In the Spring of 1962, a member of the Bureau of Laboratories staff went to the laboratory of Robert Guthrie, M.D., in Buffalo, New York, to learn the procedure for detecting phenylketonuria (PKU). Dr. Guthrie developed the bacterial inhibition procedure for the detection of this metabolic disorder, which is essentially the same method used today.

The first newborn screening act in South Carolina, passed in 1965, was directed only to children "born in hospitals licensed by the State Board of Health." There was no assigned responsibility for identification or investigation of children not tested. In the first year of screening (FY-63), 4,838 specimens of 58,231 newborn were tested (8.3 percent). Some specimens were from older, institutionalized children who already had a diagnosis of mental retardation due to an unknown cause. One patient with PKU was identified that year. The percentage of newborns tested increased each year until 86 percent were screened in 1977 and virtually 100 percent since then (See Figure).

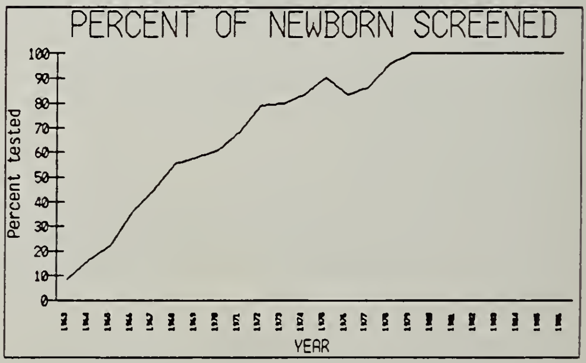
In October 1976, the Bureau of Laboratories began performing the radioimmunoassay for T_4 on the PKU specimens. In 1978, the Phenylketonuria Testing Act was modified to a Metabolic Disorders Act and expanded to include all newborn children in the state. The detection of hypothyroidism was also required, and by the end of FY-79 essentially 100 percent of the 50,000 newborns were being tested for both disorders. The birth rate in South Carolina dropped to approximately 50,000 per year in 1965 and has remained at that level until the present.

On June 5, 1986, the Metabolic Disorders Act was further amended to include screening of newborn for hemoglobinopathies. The primary abnormalities to be sought are sickle cell disease, sickle cell trait and other sickling hemoglobin disorders. It has been shown that morbidity can be substantially reduced by detecting and controlling associated infections early and by anticipating sickle cell crises.

During 13 years of screening for hemoglobinopathies, more than 200,000 children and adults have been examined. Based on the prevalence determined in those studies, the newborn screening program should detect 2,400 infants with sickle cell trait, 80 with sickle cell disease, 60 with SC hemoglobin and four with S Beta thalassemia annually.

The goal is productive lives for these South Carolinians and reduced medical costs for society.

In a cooperative pilot study by Pai and Houser described elsewhere in this issue, the Medical University of South Carolina and the Bureau of



Laboratories performed newborn screening studies for hemoglobinopathies on children born in the Charleston area hospitals. Concurrently, a study with Dr. Yearling of the DHEC Edisto Health District was also performed. During the three years of these studies more than 16,000 newborn children were screened.

The results are as follows:

Normal	94 %
AS (trait)	4.2%
AC	1.0%
SC	
SS (Sickle Cell Disease)	0.3%
CC	0.1%
S Beta Thalassemia	
Other	

From 1962 until the end of 1986, 64 children in South Carolina were diagnosed as having PKU and since 1977, 48 children were diagnosed as having hypothyroidism. This brief communication cannot evaluate the clinical success with these patients, but many are known to be leading near-normal lives. It is expected that hemoglobinopathy screening will be as successful.

Arthur F. DiSalvo, M.D., *Chief Bureau of Laboratories*
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, S. C. 29201

LETTER TO THE EDITOR

To The Editor:
RE: SC PRO

I am normally not a letter writer but the events of the last four to six weeks have driven me to this. A number of events have made practicing medicine difficult over the last year or two as all physicians know. The crowning glory is the SC PRO Review which is currently ongoing. Basically a number of charts have been returned after having been reviewed. The care for these patients has not met the approval nor has their length of stay. This has occurred to a number of my colleagues. While examining a patient with a hematocrit of 15 who was weak, had chest pain and shortness of breath and breast cancer in the office the other day, I found myself trying to figure out whether this patient should be in for the magic 23 hour admission or not. It then dawned on me that I was paying less attention to the medical needs of the patient and more to the "devices and desires" of SC PRO. My experience has been shared with almost all of my colleagues. It seems to me that "big brother" is reviewing all charts. It has gotten so that I feel that I should dictate all discharge summaries on Medicare patients to either "Whom It May Concern" or "Dear Dr. Dubose."

It seems that we have absolutely lost control. My torture is not isolated. 99 ± % of my colleagues are trying to practice good medicine to the best of their ability. I am doing likewise but feel that with SC PRO we are all in a giant "catch 22." I realize this letter will not help change things. In fact, I'm not sure how to change things as apparently the rules, regulations and directions always come from the ethereal "they." I feel like they have overstepped their boundaries when they begin to interfere with my patient care. I am not rich, I am not trying to get rich, but what I am trying to do is practice 1980s Internal Medicine. It seems that these days this is not enough.

T. Mark Meyer, M.D.
A Disheartened Physician
210 University Parkway, Suite 2500
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SOUTH CAROLINA MEDICAL ASSOCIATION

AUXILIARY

REMARKS BY THE SCMA AUXILIARY PRESIDENT TO THE SCMA AUXILIARY HOUSE OF DELEGATES

May 1, 1987

It is an honor and privilege to be installed as the 62nd president of the South Carolina Medical Association Auxiliary. This is a challenge which I accept with pleasure.

Medical auxiliary has been a part of my life since residency — which was a long time ago. It was the belief of my late husband, Tom Littlejohn, that one should be an active member or one should not complain about any programs, projects, government mandates or other significant issues. I still have an interest in quality health care and education, not only because I have a daughter who is an intern, but because I believe that quality health care and education are two of the most important items we can share with others.

We have adolescent health care issues, health education for the elderly, AIDS education, and many more. We cannot bury our heads in the sand and hope that through the process of osmosis the general public will become educated regarding health care matters. We have an obligation to the community to share knowledge with them. We must make a commitment to inform the public because we are the ones with knowledge, and we are in a position to share this knowledge with the community.

I believe that in looking at health care issues we need to address health care needs of the American people. Also, physicians must be the advocate of the patients, get to know them, and keep close to them. This could help with the malpractice issue which we are facing today.

Being a member of the "federation" is important. By "federation," we mean being a member of local, state and national auxiliaries. There is a lot of work going on at both the state and national levels that has a direct influence on the practice of medicine. These people keep abreast of pertinent issues and are always keeping the members informed. The AMA and the SCMA are dynamic organizations, constantly looking at the issues; let's work on increasing membership.

Each year each of you is asked to contribute to AMA-ERF. The monies contributed and distributed to our medical schools are used in many worthwhile ways. We appreciate your past efforts and we urge you to continue your support of this worthwhile project.

Auxilians are appreciated by the physicians for all the hard work and long hours that are spent volunteering each year on behalf of medicine. There is a bright future in medicine, and the auxiliary can help through our relationship with the community in general as well as with the medical community.

During the coming auxiliary year, I will be using the theme "New Dimensions." Auxilians and physicians will be hearing more details about this theme in the months to come. I truly hope that together we can add a "new dimension" to issues that we are facing today and will face in the future.

Mrs. Thomas C. Littlejohn, Jr. (Madge)
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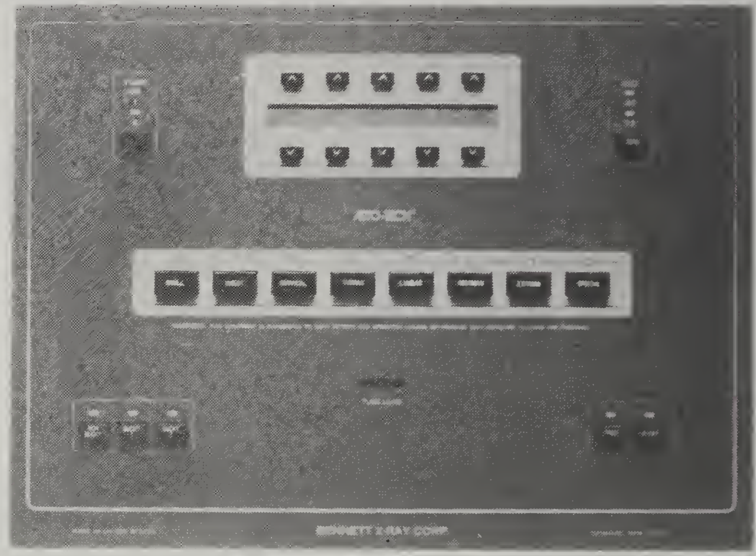

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THE JOURNAL
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COPING WITH AIDS AND HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION IN SOUTH CAROLINA*

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* Presented at the 139th Annual Meeting of the South Carolina Medical Association, Charleston, S. C., May 1, 1987.

INTRODUCTION

CHARLES S. BRYAN, M.D.*

William Osler, addressing the American Medical Association at its annual meeting in Atlanta, Georgia, in 1896, remarked that "humanity has but three great enemies: Fever, famine, and war; of these by far the greatest, by far the most terrible, is fever."[1] It was probably beyond Osler's wildest dreams that most of the classic infectious causes of death would, over the next 75 years, yield to a steady onslaught of vaccines, antibiotics, and improved living conditions. By 1980 infectious diseases remained a problem — but this problem was by and large confined to persons with compromised host defenses. Among infections, only pneumonia still ranked among the ten leading causes of death.

Today, we once again acknowledge an infectious disease to be a dreaded public enemy. Many Americans regard the menace of AIDS to be as great as the menace of nuclear warfare. In retrospect, had one sought to write the scariest imaginable science fiction story in, say, 1976 (the year that gave us Legionnaire's disease and the Swine flu), one would have been hard-pressed to devise a more pernicious plot than one involving a virus capable of selective destruction of the helper T4 lymphocyte. To our marvelous immune systems, this cell is analagous to the conductor of an orchestra, the quarterback of a football team, or the Pentagon of our nation's defenses. Such a plot could have been strengthened only by insisting that the virus be more readily transmitted from one person to another. And already, data suggest that the incidence of heterosexual transmission is increasing.

That some segments of society feel that "not enough is being done" is understandable. However, it is impressive that we have learned so much in such a short time. Basic advances in the 1970's — specifically, the discovery of reverse transcriptase in 1970 and of interleukin 2 in 1976 — paved the way for the isolation of the first human retrovirus (HTLV-1) in 1979. This technology made possible the isolation within a short time of the human immunodeficiency virus (HIV; formerly known as HTLV-III/LAV). Although still incomplete, our current understanding of this virus including its biochemistry and genetic make-up is remarkably detailed. This understanding suggests a variety of therapeutic strategies,[2] even though effective vaccines may take time to develop.

Even should such vaccines be released tomorrow, the problem of AIDS would continue to increase. Estimates hold that between one and two million Americans have already been infected by HIV. Already, estimates regarding the proportion of these people who will develop AIDS are being revised upwards. It is projected that by the year 1991, there will have been 270,000 cases of AIDS in the United States, that there will have been 179,000 deaths due to AIDS, and that annual direct patient care costs will range between $8 billion and $16 billion. Already, more San Francisco men have died of AIDS than died in conflict in all of World War I, World War II, Korea, and Vietnam combined.[3] The dual problems of AIDS and HIV infection will be with us for years to come.

The purpose of this symposium is to summarize facts about AIDS and HIV infection unique to South Carolina. Participants in this symposium, selected from the South Carolina task force, were asked to address issues especially relevant to South Carolinians. With the exception of three "overview" papers, the subjects discussed herein apply mainly to our state. We acknowledge that these papers may be non-representative, and also that many other scientific and social issues have been somewhat arbitrarily omitted for want of space. We encourage the raising of such issues by our readership, since these problems will continue to plague us throughout the forseeable future. ☐

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* 5 Richland Medical Park, Columbia, S. C. 29203.

MEETING THE CHALLENGE: THE SOUTH CAROLINA AIDS TASK FORCE

CLARK W. HEATH, JR., M.D.*

South Carolina, like most of the United States, is in the early phases of the AIDS epidemic. The epidemic will grow, perhaps doubling every 18 months over the next several years (Table 1). From present estimates of about 15,000 total HIV infections in the state (AIDS, AIDS-related complex [ARC], and asymptomatic HIV infection), it can be projected that this total will have grown to about 120,000 by the end of 1991.

To meet this disease challenge, we need a strong and continuing alliance between providers of medical care and providers of public health services in South Carolina. The task is two-fold: (1) to furnish adequate treatment for affected persons and (2) to apply effective AIDS prevention programs.

Progress towards such statewide action was begun in early 1985 by the initiation within DHEC of an organized program directed at AIDS prevention. In the fall of 1986, a multidisciplinary AIDS/HIV Task Force was organized to advise DHEC on future AIDS-related programs and to provide a forum for communicating information and ideas as the course of the epidemic unfolds. The Task Force consists of some 70 persons drawn from a wide range of professional experiences (health care, public health, social service, correctional work, drug abuse treatment, churches, schools, private industry, academia, etc.). The full Task Force will meet twice a year. In the meantime, four smaller work groups, drawn from the Task Force, are meeting to discuss plans and policies in particular areas: Epidemiology, Health Care, Health Education, and Legislation.

1. *Epidemiology* — Full information about current incidence and distribution of AIDS/ARC/HIV-infection in the state is essential for developing and managing treatment and prevention programs. Full-blown AIDS has been reportable in South Carolina since 1982. Laboratory-confirmed HIV infection was made reportable in February 1986. These surveillance programs continue to be developed, within the constraints of limited funds. Their usefulness will be directly related to how promptly and completely information about cases can be obtained by DHEC working with physicians, laboratories, and health care institutions throughout the state. Knowledge of HIV infection is currently being used for selective sex and drug use contact identification, particularly where the potential exposure of women of child-bearing age is at issue. As resources grow, greater emphasis will be given to such case/community followup as a direct strategy for limiting AIDS virus spread.

2. *Health Care* — The initial AIDS-related program work at DHEC was directed at offering HIV antibody testing, together with pre- and post-test patient counselling, in all DHEC Health Clinics. This work continues to increase as the epidemic grows. Counselling is coupled with medical referral for baseline clinical evaluation and followup. How such outpatient care will be provided in the future for cases of early HIV infection is a pressing issue, by no means resolved. Together with the later in-patient and hospice needs of AIDS/ARC patients with more advanced and terminal illness, these health care concerns raise obvious questions about costs and resources. Levels of patient need for outpatient, hospital and hospice services may be expected to increase about eight-fold between 1987 and 1991 (Table 2). We must make plans now if this future health care need is to be adequately met.

3. *Health Education:* The initial DHEC program for AIDS in 1985 included health education efforts, principally directed at homosexual groups. This was subsequently expanded to address the needs of health care workers and the population at large. There are important educational challenges to be met, particularly in reaching high risk groups, such as intravenous drug users and prison populations, and in addressing informational needs in the workplace and in

---

* Bureau of Preventive Health Services, South Carolina Department of Health and Environmental Control, 2600 Bull Street, Columbia, S. C. 29201.

TABLE 1
Cumulative Numbers of Cases of AIDS, ARC, and Asymptomatic HIV Infection in South Carolina 1987-91 (End-of-year Estimates)[°]

	Year				
	1987	*1988*	*1989*	*1990*	*1991*
Acquired Immune Deficiency Syndrome (AIDS)	250	417	696	1,162	1,940
AIDS-related Complex (ARC)	2,500	4,170	6,960	11,620	19,400
Asymptomatic Human Immuno-deficiency Virus (HIV) Infection	12,500	20,850	34,800	58,100	97,000
Total Cases	15,250	25,437	42,456	70,882	118,340

[°] Assumes that annual incidence will double every 18 months, that a total of 150 AIDS cases occurred through 1986, and that 100 new AIDS cases will occur in 1987.

TABLE 2
Anticipated AIDS/ARC/HIV Patient Loads for Outpatient, Hospital, and Hospice Care Services in South Carolina, 1987-91

	Year				
Clinical Services[°]	*1987*	*1988*	*1989*	*1990*	*1991*
Outpatient	7,500	12,510	20,880	34,860	58,200
Hospital	1,375	2,294	3,828	6,391	10,670
Hospice	1,375	2,294	3,828	6,391	10,670

[°] Outpatient = ½ HIV + ½ ARC
Hospital = ½ AIDS + ½ ARC
Hospice = ½ AIDS + ½ ARC

schools. School-age children at both secondary and primary levels need particularly to understand about AIDS since it is at these early stages of life when people can best use such knowledge to develop responsible sex behaviors and to avoid lifestyles which depend on drugs. Educational efforts will also promote rational understanding of the AIDS problem and reduce the damaging effects of fear and discrimination which have accompanied the emergence of this disease. As a gauge of how well the general population understands the AIDS problem at any point in time, we are asking questions about AIDS each month on the regular DHEC Behavioral Risk Factor Survey, a random telephone survey designed to assess health knowledge and behaviors in South Carolina. As shown in Table 3, AIDS understanding has many gaps at present, especially in relation to the lack of infection risk through casual contacts and the safety of current blood transfusion resources.

4. *Legislation:* We are actively exploring ways in which the law-making process may strengthen our ability to deal effectively with AIDS. At pres-

TABLE 3
Public Understanding of Facts Related to AIDS
DHEC Behavioral Risk Factor Survey
South Carolina, March 1987
(148 Respondents)

	Response (percent)			
	Yes	*No*	*Uncertain*	*Other*°
Would you say that a person who looks and feels perfectly healthy can be infected with the AIDS virus?	80	7	10	3
Can a person become infected with the AIDS virus by. . . .				
Working with an infected worker?	12	69	17	2
Drinking from the same glass as an infected person?	18	48	30	1
Kissing an infected person on the cheek?	14	66	18	2
Having sex with an infected person?	92	1	5	2
Sharing an injection needle with an infected person?	85	3	10	2
Getting a transfusion from an infected person?	90	1	7	2
Giving blood?	55	32	11	2
Do you believe a blood transfusion from the Red Cross or similar blood bank is safe from AIDS?	28	34	35	3
Do you believe a child who is infected with the AIDS virus should be kept out of school?	21	48	30	1

° Inappropriate response or refusal to answer.

ent, the principal thrust has been towards strengthening existing statutes which protect the confidentiality of patient records at DHEC in relation to sexually transmitted diseases and towards being certain that anti-discrimination laws in the state fully protect the personal rights of persons infected with HIV. Assurance of patient confidentiality and protection against discrimination are essential for our management of this disease problem. At the same time, we believe that laws which would mandate HIV testing (requirements for premarital or preemployment testing, for instance) are not a desirable public health approach. Control of this epidemic requires meaningful voluntary changes in high-risk behaviors, and such changes can best be achieved through active, routine use of HIV testing with full informed consent and suitable pre- and post-test counselling. Involuntary, required testing would work against that goal and would be likely to waste resources by failing to focus public health programs on populations where risk is greatest. ☐

DESCRIPTIVE EPIDEMIOLOGY OF AIDS AND HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION IN SOUTH CAROLINA, 1982-1987

JOHN V. RULLAN, M.D., M.P.H.*

EPIDEMIOLOGY OF AIDS

The Centers for Disease Control assign confirmed cases of AIDS to the state where the person first developed symptomatology. The first confirmed case of AIDS in South Carolina was reported in April, 1982. As of April 6, 1987, 122 confirmed cases of AIDS (0.4 percent of the 34,513 reported cases in the United States) have been assigned to South Carolina, which ranks 27th among the 55 states and territories with respect to the total number of cases.

Calculation of cumulative incidence rates, adjusted for population density, indicates that the United States as a whole has experienced 150 cases of AIDS per million population (basing the denominator estimates on the 1980 census). The largest number of reported cases have come from 16 metropolitan areas: New York City, San Francisco, Los Angeles, Houston, Miami, Washington, D. C., Newark, Chicago, Dallas, Philadelphia, Atlanta, Boston, Nassau-Suffolk (NY), Ft. Lauderdale, Jersey City, N. J., and Seattle. When one excludes these areas (from which 25,089 cases have been reported among 54.8 million persons), the cumulative incidence of AIDS for the remainder of the United States is 54.3 per million.[1] The cumulative incidence rate for South Carolina is 36.2 per million. Thus, the cumulative incidence rate of AIDS for the entire United States is four times greater than South Carolina's. However, excluding the 16 highest-risk areas, the cumulative incidence of AIDS for the remainder of the United States is only 1.5 times greater than South Carolina's. Nevertheless, South Carolina is considered to be a low-risk AIDS reporting area, compared to the remainder of the country, at this time.

As has been the case elsewhere, the annual number of cases of AIDS reported from South Carolina has increased steadily. There were five cases in 1982, eight in 1983, 14 in 1984, and 44 in 1985. As of April 6, 1987, 42 cases had been reported in 1986; however, due to a lag time between reporting and confirmation, we can expect that 1986 cases will continue to emerge throughout 1987.

To date, 27 of the 46 counties in South Carolina have reported at least one case of AIDS.[2] The majority of cases, however, have been reported from Charleston and Richland counties. With 30 cases, Charleston County has a cumulative incidence rate of 101.7 per million population. With 25 cases, Richland County has a cumulative incidence rate of 87.9 per million population. Greenville County has had nine cases, but the cumulative incidence rate (29.6 per million) is below the state's average. Aiken County has had eight cases, with an above-average cumulative incidence rate of 70.4 per million. The cumulative incidence rate for the remaining 42 counties is 21.1 cases per million population.

Of the 122 reported cases, 117 have been adults or adolescents (age 13 and above) and five have been in children less than 13 years of age (Table 1). Among the cases in adults or adolescents, 93 percent have been in males. Blacks have comprised 53 percent of cases although representing only 31 percent of South Carolina's population. The majority of cases (51.7 percent) are in the 30 to 39 year-old age group. Of the patients diagnosed after 40 years of age, 63 percent are white males. The risk factor status was reported in 92 percent of white male cases; in 90 percent of these, the risk factor mentioned was homosexual/bisexual (Table 2). The risk factor status was reported in 86 percent of black male cases; in 54 percent of these, the risk factor mentioned was intravenous drug abuse. These distributions are similar to those of the entire United States (Tables 1 and 2).

Five childhood cases have been reported from

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TABLE 1. DISTRIBUTION OF PATIENTS WITH CONFIRMED AIDS, SOUTH CAROLINA, ACCORDING TO AGE GROUP, RACE, AND SEX*

AGE GROUP (years)	WM	WF	BM	BF	SC (%)	US (%)
13-19	1	--	--	--	0.8	0.4
20-29	9	--	9	3	18.0	21.2
30-39	24	--	32	4	51.3	47.4
40-49	13	--	8	2	19.7	21.1
50 and greater	7	--	5	--	10.2	9.9
TOTALS	54	0	54	9	(117 cases)	

*Data for adults and adolescents through April 6, 1987. WM = white male; WF = white female; BM = black male; BM = black female; SC (%) = percentage of cases in South Carolina; US (%) = percentage of cases in the United States.

TABLE 2. DISTRIBUTION OF PATIENTS WITH CONFIRMED AIDS, SOUTH CAROLINA, ACCORDING TO RISK FACTORS, RACE, AND SEX*

RISK FACTORS	WM	WF	BM	BF	SC (%)	US (%)
Homosexual or bisexual (only)	45	--	21	--	56.4	65.6
IV drug abuse (only)	1	--	18	2	18.0	16.9
Homosexual/bisexual and IV drug abuse	2	--	5	--	6.0	7.7
Hemophilia	1	--	--	--	0.8	0.8
Heterosexual contact	--	--	2	3	4.3	3.8
Transfusion	1	--	1	--	1.7	1.9
Undetermined	4	--	7	4	12.8	3.2
TOTALS	54	0	54	9	(117 cases)	

*Data for adults and adolescents through April 6, 1987. For abbreviations, see Table 1.

four different counties. Three of these have been attributed to blood-related risk factors: two transfusion-related and one hemophilia-related. All three of these exposures preceded the initiation of blood screening for HIV, which began in May, 1985. The risk factors for the other two childhood cases are unknown. Two of the children are alive.

HIV INFECTION

It has been estimated that for every diagnosed case of AIDS, there are 50 to 100 persons infected with the human immunodeficiency virus (HIV).[3] HIV serologic testing in South Carolina began in May, 1985. As of March 31, 1987, 795 cases of HIV infection have been confirmed in this state.

Estimation of HIV seroprevalence in South Carolina is difficult because of the selection biases inherent in screening tests. For the general population, two available data bases are military recruits and blood donors.[4, 5] For persons tested individually for health-related reasons, the 46 free DHEC county testing sites, the hospitals, physicians, and laboratory screening data bases[6] can be used to estimate HIV seroprevalence among South Carolinians (Table 3).

Routine reporting to DHEC of HIV-confirmed positive results began on February 16, 1986. Due to lack of complete data for 1985, only 1986 data will be analyzed here.[2]

During 1986, 429 cases of HIV infection were reported to DHEC. Analysis of these cases by quarter suggests that the requirement of reporting has had no significant impact on HIV testing. Of these 429 infections, 298 (69.5 percent) were reported from the DHEC system. The remaining 131 came from hospitals, physicians, laboratories, federal facilities, and other sources.

Among the 1,896 persons tested at DHEC clinics during 1986, 298 (15.7 percent) were found to be HIV-positive. Health districts with relatively high rates included East Midlands, Trident, and Appalachia II (Table 4).

Demographic data are available for 333 of the 429 cases of HIV infection reported in 1986. The distribution of these cases by decade of life was as follows: three cases in persons less than 10 years of age; 14 in persons 10 to 19 years of age; 131 in persons 20 to 29 years of age; 136 in persons 30 to 39 years of age; and the remainder in persons 40 years of age or older. Most cases (92 percent) were in males. Blacks comprised 48 percent of cases (although, again, comprising only 31 percent of the state's population). Three instances of perinatal transmission were reported; the mothers were black females whose information was reported after delivery.

CONCLUSIONS

Even though South Carolina is a low risk AIDS-reporting state, the HIV surveillance data indicate that at least 36 new HIV infections are being reported each month. Males continue to have a much higher reported risk of infection than females. Richland and Charleston counties have the highest rates of AIDS and HIV infection, but there is a wide distribution of cases throughout South Carolina. South Carolina's AIDS cases are similar to those of the United States as a whole with regard to age, race, and risk factors.

Among whites with AIDS and HIV infection in South Carolina, the major risk factors have been homosexuality or bisexuality. Among blacks, intravenous drug abuse, heterosexual contact, and

TABLE 3. SEROPREVALENCE OF HIV ANTIBODIES IN SOUTH CAROLINA, ACCORDING TO TESTING FACILITY

FACILITY	PERIOD	NO. OF SAMPLES	PERCENT POSITIVE
GENERAL			
Blood banks*	1986	156,932	0.02 %
Military recruits	10/85 - 9/86	9,825	0.14
SPECIFIC			
DHEC clinics	5/85 - 2/87	3,451	14.1
Hospitals	10/85 - 2/87	1,359	14.0
Physicians	10/85 - 2/87	320	9.3
Laboratories	10/85 - 2/87	30	33.3

*Blood banks included are Richland, Charleston, Greenville, and Spartanburg (data from Spartanburg are from 3/86 to 12/86).

TABLE 4. RATE OF HIV SEROPOSITIVITY ACCORDING TO HEALTH DISTRICTS*

HEALTH DISTRICT	NO. OF POSITIVE TESTS	RATE/100,000 POPULATION
East Midlands	87	28.5
Trident	86	17.7
Appalachia II	54	13.9
Appalachia III	29	10.3
Waccamaw	22	10.3
Edisto	17	14.5
Pee Dee I	16	8.7
Wateree	15	8.1
West Midlands	12	6.3
Appalachia I	10	5.2
Cattawba	8	3.9
Low Country	8	5.2
Lower Savannah	7	4.8
Pee Dee II	6	4.4
Upper Savannah	2	1.1

*Based on 429 cases reported for 1986.

perinatal transmission have also been important. These descriptive epidemiologic characteristics need to be taken into consideration when planning educational strategies.

The HIV seroprevalence estimates support the conclusion that the epidemic is contained among high risk groups and does not show signs of rapid diffusion into the general population, even though there are some indications that heterosexual transmission is becoming more important (there were eight white female HIV infections in 1986).

Select contact tracing of females of childbearing age, prostitutes, and bisexuals is necessary to prevent spread into the general population. Prevention of perinatal transmission should be considered among the highest priorities of the HIV surveillance program. □

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THE CLINICAL SPECTRUM OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION

H. PRESTON HOLLEY, JR., M.D.*

Since the initial reports of an acquired deficit in cell-mediated immune function associated with opportunistic infections (1) and Kaposi's sarcoma (2), over 33,482 cases of acquired immune deficiency syndrome (AIDS) have been reported to the Centers for Disease Control (CDC). As of April, 1987, 117 cases have been reported in S. C. The syndrome of AIDS represents the most serious manifestation of infection with the human immunodeficiency virus (HIV, previously known as HTLV-III/LAV). The spectrum of infection ranges from asymptomatic to severe immunodeficiency associated with life-threatening and often fatal secondary infections or cancers. The diagnosis of infection is made by demonstrating the presence of the AIDS virus in tissues, by viral isolation, or (most often) by antibody to HIV in serum on at least two tests. Repeated positive testing for antibody is required because of the incidence of false-positives by the ELISA (EIA) test. A repeated positive ELISA test plus a positive Western blot is accepted as evidence of infection.[3]

Various classification systems of the spectrum of HIV infections have been proposed.[4, 5, 6] Table 1 summarizes the system recently adopted by the CDC.[6] I shall use this system to review the various manifestations of HIV infection. Once patients have developed disease in a higher group, they should not be reclassified if clinical findings resolve, since the underlying disease process has not changed.

ACUTE HIV INFECTION (GROUP I)

Acute infection with HIV commonly manifests as a mononucleosis-like illness.[7] The incubation period from infection to acute illness is from 1-2 weeks.[7] Seroconversion from negative to positive HIV-antibody varies from about 2-8 weeks.[7] The clinical illness may last from a couple of days to over two weeks.

Clinical signs and symptoms are shown in Table 2.[7] Clearly, the syndrome is similar to infectious mononucleosis and the diagnosis should be considered especially in high-risk individuals with heterophile negative "mononucleosis." It seems likely that many, if not most patients, do not experience or recognize an acute illness, but rather are asymptomatic with acute infection.

There are no specific laboratory findings; but lymphopenia, decreased CD4+ (helper, T4) cells, increased CD8+ (suppressor, T8) cells, inverted T4/T8 ratio, atypical lymphocytes, and thrombocytopenia have been reported.[7] Since antibody titers to HIV are negative during the acute illness, diagnosis depends on a high index of suspicion and demonstration of a four-fold or greater titer rise in HIV-antibody.

ASYMPTOMATIC HIV INFECTION (GROUP II)

By definition, these patients do not have clinical symptoms or persistent lymphadenopathy. They may have laboratory abnormalities such as lymphopenia, thrombocytopenia and decreased total helper cells. It is estimated that as many as 2,000,000 people in the United States may be infected with the AIDS virus; and, at any one point in time, most are asymptomatic.

PERSISTENT GENERALIZED LYMPHADENOPATHY (PGL) (GROUP III)

Also known as AIDS-related complex (ARC), patients in this group must have palpable lymph node enlargement of > 1.0 cm at two or more extrainguinal sites persisting for at least three months' duration without another infectious, neoplastic or other cause. Of course, HIV serology must be positive. Such patients' lymph nodes generally reveal follicular hyperplasia with an abundance of B-lymphocytes when examined histologically.[8] The need for routine lymph node biopsy in these patients is somewhat controversial. Unless the nodes are very firm and large (suggesting lymphoma) or a change in clinical status occurs

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TABLE I

CDC Classification System for Human T-Lymphotropic Virus Type III/Lymphadenopathy-Associated Virus Infection

Group I	Acute infection
Group II	Asymptomatic infection
Group III	Persistent generalized lymphadenopathy
Group IV	Other disease
Subgroup A	Constitutional disease
Subgroup B	Neurologic disease
Subgroup C	Secondary infectious diseases
Category C-1	Specified secondary infectious diseases listed in the CDC surveillance definition for AIDS[°]
Category C-2	Other specified secondary infectious diseases
Subgroup D	Secondary cancers[°]
Subgroup E	Other conditions

[°] Includes those patients whose clinical presentation fulfills the definition of the acquired immunodeficiency syndrome (AIDS) used by the Centers for Disease Control (CDC) for national reporting (see text). (Adapted from MMWR 1986; 35(20):334-339.)

TABLE II

Clinical Signs and Symptoms of Acute HIV Infection

Fever	Anorexia	Lymphadenopathy
Myalgia	Rash	Headache
Malaise	Sweats	Nausea/Vomiting
Sore Throat	Arthralgia	Diarrhea
Photophobia	Lethargy	

(such as fever, weight loss, rapid node enlargement, fluctuance or marked tenderness of the nodes), there is little justification for routine lymph node biopsy.[8]

Patients with PGL may have weight loss, malaise, diarrhea, fever or other symptoms. The presence of such symptoms may indicate an undiagnosed infection or be related to the HIV infection. Diarrhea, either persistent (< 1 month) or intermittent, is often secretory and can be due to HIV infection. An extensive evaluation should be done, however, searching for another cause. Such pathogens as *Salmonella, Shigella, Entamoeba histolytica, Cryptosporidium, Mycobacterium avium-intracellulare, Cytomegalovirus* and others have been reported. Persistent symptoms, as described below, may indicate advanced disease (Group IV).

It is generally believed that most, if not all, patients with this syndrome will eventually develop AIDS.

AIDS AND OTHER HIV DISEASE (GROUP IV)

The CDC assigns various subgroups within this group. The spectrum of disease severity may vary widely in Group IV, but generally, these patients are further along in their disease than those of other groups. In addition, patients can move to Group IV from Group II without passing through Group III (Figure 1). The definitions below imply that no cause other than HIV infection is found for the symptoms except in Subgroup C.

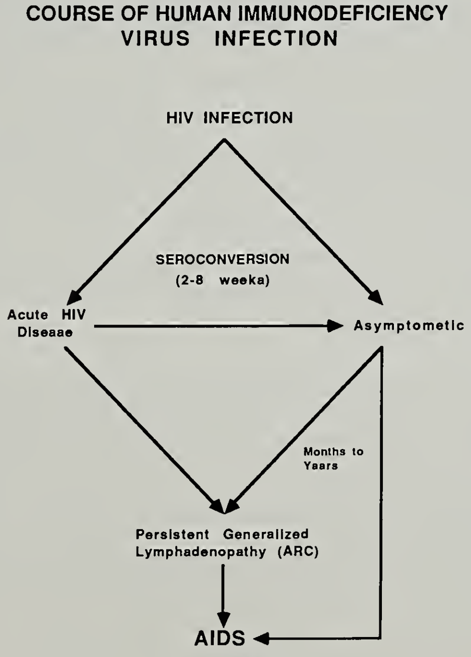
COURSE OF HUMAN IMMUNODEFICIENCY VIRUS INFECTION
HIV INFECTION
SEROCONVERSION
(2-8 weeks)
Acute HIV Disease
Asymptometic
Months to Years
Persistent Generalized Lymphadenopathy (ARC)
AIDS

FIGURE 1

Subgroup A. Constitutional Disease

Patients will have one or more of the following: (1) persistent fever longer than one month, (2) weight loss of greater than 10 percent of baseline, or (3) persistent diarrhea longer than one month.

Subgroup B. Neurologic Disease

Patients will have one or more of the following: (1) dementia, (2) myelopathy, or (3) peripheral neuropathy. Psychiatric symptoms such as depression, paranoia, anxiety, and hallucinations may precede clinical dementia. Other patients may have subtle cognitive dysfunction which can progress over several months to dementia.[8] AIDS virus has been recovered from cell-free spinal fluid from patients with progressive deterioration of the spinal cord and peripheral nerves. Diagnosis of this syndrome may be made easier once HIV antigen detection kits become commercially available.

Since numerous other central nervous system infections and neoplasms can occur in AIDS patients, a reasonable attempt to rule these out is necessary.[9] Such infections include cytomegalovirus, *Herpes simplex*, *Herpes zoster*, papovavirus, toxoplasmosis, cryptococcus, syphilis and others. Neoplasms include primary brain lymphomas and metastatic lymphomas or Kaposi's sarcoma.

Subgroup C. Secondary Infectious Diseases

Category C-1: (AIDS) Patients in this subgroup include those with one or more of the specified infectious diseases which fulfills the definition of AIDS as defined by the CDC:[10] *Pneumocystis carinii* pneumonia, chronic cryptosporidiosis, toxoplasmosis, extraintestinal strongyloidiasis, isosporiasis, candidiasis (esophageal, bronchial, or pulmonary), cryptococcosis, disseminated histoplasmosis, disseminated *Mycobacterium avium complex*, cytomegalovirus infection, chronic *Herpes simplex*, and progressive multifocal leukoencephalopathy.

Category C-2: Includes patients with symptomatic or invasive disease including multidermatomal *Herpes zoster*, oral hairy leukoplakia, recurrent salmonella bacteremia, nocardiosis, tuberculosis or oral candidiasis (thrush).

Subgroup D. Secondary Cancers

Cancers associated with AIDS include Kaposi's sarcoma, non-Hodgkin's lymphoma and primary lymphoma of the brain.

Subgroup E. Other Conditions in HIV Infection

Included here are associated diseases which do not fit into other categories such as chronic lymphoid interstitial pneumonitis or other infections and neoplasms not listed in other subgroups.

Idiopathic thrombocytopenia and other hematologic disorders have also been described. It is unclear whether or not these are directly related to HIV infection, autoimmunity, or some other infection. Undoubtedly, other syndromes will be described in the future as more is learned about this complex disease known as AIDS. ☐

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CLINICAL MANAGEMENT OF THE AIDS PATIENT

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The Acquired Immunodeficiency Syndrome (AIDS) is understood to be an advanced stage of infection with human immunodeficiency virus (HIV).[1] Due to its activity, the patient's cellular immunity becomes depleted, which is reflected in the low number of circulating T-helper lymphocytes. The patient is then vulnerable to an opportunistic infection (OI) or a tumor (T). In the classification system for HIV infection, AIDS-defining conditions fall within "other diseases," Group IV, subgroups C1 and D for OI and T respectively.[2]

OPPORTUNISTIC INFECTIONS

Patients infected with HIV and with symptomatic or invasive disease to one of the twelve OI fulfill the Centers for Disease Control (CDC) criteria for AIDS: (1) Pneumocystis carinii pneumonia (PCP), (2) Chronic Cryptosporidiosis, (3) Toxoplasmosis, (4) Extra-intestinal Strongyloidiasis, (5) Isosporiasis, (6) Candidiasis (esophageal, bronchial or pulmonary), (7) Cryptococcosis, (8) Histoplasmosis, (9) Disseminated infection with Mycobacterium avium complex (MAC) or M.Kansasii, (10) Disseminated Cytomegalovirus infection (CMV), (11) Mucocutaneous herpes simplex (HSV) persisting for longer than a month and (12) Multifocal leukoencephalopathy due to Papovavirus. Kaplan and coauthors offered recently a detailed review of the treatment modalities (Table 1).[3] The management of the most frequent conditions is commented upon below.

Pneumocystis Carinii Pneumonia: PCP is the most frequent OI: it accounts for over 60 percent of the AIDS cases. In the minority of these; not higher than 20 percent, the pneumonia is so extensive that mechanical respiration is needed in addition to chemotherapy. Only one of our ten patients treated with mechanical respiration survived the PCP episode. Despite the effectiveness of trimethoprim-sulfamethosazole (TMP-SMX), 50 percent of patients may develop allergies presenting as fever, a morbilliform rash, pruritis and eosinophilia. This dictates a switch in therapy to pentamidine; the total length of treatment is 18 to 21 days. The change in therapy due to allergy has little unfavorable impact on the outcome of PCP. If clinical or radiological deterioration occurs at five to seven days of therapy with TMP-SMX, one may try pentamidine; this is rarely effective, as a deteriorating pneumonitis may be due to a coinfecting CMV.[4] Prophylaxis with TMP-SMX, (DS, b.i.d.), prevents recurrences of PCP, but few patients escape allergy or bone marrow inhibition.

Pentamidine toxicity also affects 50 percent of patients: rapid intravenous (IV) administration may cause severe hypotension; slowing the rate of infusion is then required. Renal, hepatic and hematologic toxicity occurs frequently, and hyperglycemia and hypoglycemia may also happen.

Cryptococcal meningitis is one of the most difficult OI to treat. For example, a patient of ours (with AIDS) required almost five grams cumulatively of amphotericin B for five months to contain this meningitis, only to succumb to the relentless infection. Amphotericin B is usually given alone, 0.4 mgs to 0.6 mgs per Kg per day IV, cumulating to 2.5 grams or more. A weekly dose of 100 mgs IV is required indefinitely to prevent a relapse.

Toxoplasmosis: Brain abscess or overwhelming systemic infection due to *Toxoplasma gondii* calls for treatment with pyrimethamine — sulfadiazine. This is effective initially, but few patients survive more than 100 days following the presentation of cerebral toxoplasmosis.

Cryptosporidiosis in AIDS may produce a continuous diarrhea. There is no agreement whether therapy is effective. Portnoy and coworkers treated diarrhea due to this Coccidial protozoan with spiramycin, an orally administered macrolide antibiotic.[5] However, other authors had a less encouraging experience. Opiates and rehydration are palliative treatments.[3]

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TABLE 1. THERAPY OF OPPORTUNISTIC INFECTIONS IN PATIENTS WITH AIDS *

INFECTION	THERAPY
Pneumocystis carinii pneumonia	Trimethoprim-sulfamethoxazole or pentamidine isethionate for 14-21 days; consider maintenance therapy
Cryptococcal meningitis	Amphotericin B plus flucytosine. Consider maintenance therapy
Toxoplasmosis	Sulfadiazinesodium plus pyrimethamine with leucovorin
Mycobacterium avium-intracellulare	No clearly-effective therapy available
Cryptosporidiosis	No clearly effective therapy available
Oral candidiasis	Clotrimazole troche or nystatin swish or ketoconazole
Esophageal candidiasis	Ketoconazole
Cytomegalovirus (disseminated)	9-(2-hydroxy-[hydroxymethyl]ethoxymethyl) guanine (investigational)
Herpes simplex	Acyclovir sodium
Herpes zoster (disseminated)	Acyclovir sodium

*From Kaplan LD, Wofsy CB, Volberding PA: Treatment of patients with acquired immunodeficiency syndrome and associated manifestations. JAMA 257: 1367-1374, 1987.

Mycobacterial infections: MAC may cause in some patients with AIDS bacteremia, in others a continuous diarrhea. An overwhelming MAC infection resulting in a replacement of the bone marrow with acid fast bacilli (AFB) was a terminal event in one of our patients. Despite the effectiveness of ansamycin and clofazimine *in vitro* against MAC AFB, the *in vivo* therapy has been ineffective.[3, 4] In contrast, effective treatment of HIV-infected individuals against *Mycobacterium tuberculosis* can be accomplished with at least three standard antituberculosis drugs, given for 18 months or longer.

Invasive Candidiasis: Patients with esophageal Candidiasis are treated with ketoconazole, 400 mgs orally, always in a fasting state because of the requirement for an acid medium for absorption. However, ketoconazole should be given only once a day because the drug may be inhibitory otherwise to the adrenal gland.

Mucocutaneous Herpes Simplex Virus (HSV): This infection can be contained with acyclovir. Rectal pain with constipation or diarrhea may mean anal herpes even in the absence of such history. It can be proven by a virus culture. The treatment consists of acyclovir five times a day x 10 days and then usually a maintenance dose of 200 mgs three times daily indefinitely.

Cytomegalovirus: The investigational guanine analog, dihydroxy-propoxymethyl guanine (DHPG), is inhibitory to CMV. *In vivo* effectiveness was shown in the treatment of chorioretinitis and colitis but not in treating pneumonia. We are unaware of reports of successful treatment with this drug against CMV encephalitis. CMV is sensitive to human interferon,[6] but there is no evidence of a favorable therapeutic effect.

Varicella Zoster Virus (VZV) in patients with HIV, herpes zoster is, in some cases, predictive of progression to AIDS and is classified as HIV disease, Group IV, subgroup C2.[2] Herpes zoster, usually multidermatomal, may appear in patients with AIDS as well. Acyclovir should be used in this instance at the dose which is four times the dose used for HSV, namely, 800 mgs five times daily for ten to twenty days.

TREATMENT OF NEOPLASTIC DISORDERS IN AIDS

Kaposi's Sarcoma: This topic was recently reviewed by Kaplan, Wofsy and Volberding.[3] Minimal Kaposi's sarcoma usually does not require treatment. However, Kaposi's sarcoma producing systemic symptoms or accompanied by opportunistic infections is treated with chemotherapy. Alternating vinblastine and vincristine have been used. The treatment seems to be palliative only. Krown and coworkers from the Memorial Sloan-Kettering Cancer Center used recombinant interferon alpha at a high dose of 36-54 million units by daily intramuscular injections for four weeks. There was a 38 percent response rate.[7]

ANTIVIRAL TREATMENT

Azidothymidine (AZT): Azidothymidine is the most promising antiviral agent for AIDS at this time. AZT became a controlled prescription item in April 1987. Physicians have to apply via a questionnaire for patients — candidates to be started on this antiviral treatment. AZT was developed as antitumor agent but was not very effective. In 1984, at the National Institutes of Health, Drs. Broder and Yarchoan demonstrated the effectiveness of this agent against retroviruses.[8] Yarchoan and coauthors examined the effects of AZT in 19 patients with AIDS or AIDS-related complex (ARC). At the dose of 2.5 mg/kg IV p.o. every four hours, extending over eight weeks, all five patients demonstrated increases in their helper-inducer lymphocyte counts in peripheral blood.[9] Between February and September of 1986, a double-blind placebo AZT trial involved approximately 140 patients in each of its arms. In September, the code was broken, showing that only one of the 85 AIDS patients treated with AZT succumbed while 11 out of 75 placebo recipients experienced a fatal outcome. Concerning the patients with ARC, there was no mortality among the 60 patients treated with AZT, while five out of the 62 patients receiving placebo died. These results are summarized in Table 2. While AZT was protective against the lethal outcome, anemia requiring transfusions of blood occurred in 25 percent of those treated, i.e., more than twice more frequently than in the placebo group.[10]

In October 1986, the AZT trial became open. Patients with AIDS, surviving PCP could enroll. We treated six such patients from November 1986 through March 1987. Our preliminary results are summarized in Table 3. Only three patients received AZT without interruption and in one of these the dose had to be halved. In two of the three patients in whom AZT was interrupted, a neutropenic episode occurred. In one instance, this required hospitalization, but both patients could be restarted on therapy; the dose was reduced from 1200 mg to 600 mg a day. The protocol required that the drug be given at four hourly intervals: 200 mgs or 100 mgs six times a day. In patient #6, blood transfusions had to be given on three occasions, followed by the recurrence of Salmonella sepsis and diarrhea with the recovery of MAC in the stool. For these reasons, AZT was

TABLE 2. EFFECT OF AZIDOTHYMIDINE (AZT) ON THE OUTCOME OF AIDS*

TREATMENT	NUMBER OF PATIENTS	DEATHS	HEMOGLOBIN DROP (≥25%)
AZT, 1.5 grams/day	145	1	47
Placebo	137	16	13

*282 patients with AIDS or advanced ARC treated with AZT for 3½ to 7 months (median 4½ months) in 1986.[10]

TABLE 3. EFFECT OF AZT ON COURSE OF AIDS IN SIX PATIENTS TREATED DURING 1986-1987*

PATIENT	AGE	DOSE (mg/day)	T4 COUNT**		COMPLICATIONS[§]	
			1986	1987	AZT	HIV
1	31	1200	212	427	none	oral thrush
2	25	1200	120	124	none	external otitis (Candida)
3	30	1200 --> 600	50	61	neutropenia	oral thrush
4	25	1200 --> 600			neutropenia	?
5	42	1200 --> 600			neutropenia	?
6[¶]	29	1299 -> 600 -> 0			anemia, neutropenia	Salmonella Mycobacterium-avium-intra-cellulare infection

*All patients survived Pneumocystis carinii pneumonia in 1986 and were treated with AZT between March 1986 and March 1987.

**T4 cells per cmm of peripheral blood.

[§] Complications attributed to AZT or to HIV infection. "?" indicates patients without known complications of HIV infection after beginning AZT.

[¶] AZT was discontinued in this patient due to bone marrow failure (despite reduction in the dose and transfusions on three occasions; the patient subsequently expired.)

discontinued.

It is difficult to project whether our five-month-long favorable experience is attributable to antiviral treatment. An encouraging finding in patient #1 was the doubling of the T-helper count associated with AZT. Likewise, patient #3 has experienced a 20 percent increment in the T4 count.

The practicing physician may benefit from the experience with the open AZT protocol in order to screen candidates for treatment. It is logical to include henceforth also AIDS patients experiencing other than PCP. The patient should require only occasional assistance in daily activities. By laboratory results, hemoglobin should be at 9 per dl or higher, the total neutrophil count at 1000 or higher, the platelet count should be 50,000 per cmm or higher in the peripheral blood, the creatinine at 1.5 mg/dl or lower. A decrease of hemoglobin to < 7 g/dl, but > 6 g/dl should lead the reduction of the AZT daily dose from 1200 mg to 600 mg. Likewise, a reduction of neutrophil count from 1,000 or more to 750 to 999 per ccm of blood should result in the same decrease. For a decrease of hemoglobin below 5 g/dl, AZT should be stopped and blood transfusion given. AZT may be restarted at 600 mgs a day, after a week or two of monitoring, when the hemoglobin reaches the entry value of 9 g/dl or higher.

The mechanism of action of AZT is also attractive and of importance to clinicians. HIV replicates in a peculiar manner whereby the ribonucleic acid genome is first copied as a deoxyribonucleic acid provirus. The mediating enzyme is the reverse transcriptase, also contained in the retrovirus. AZT inhibits the reverse transcriptase by being incorporated into the growing chain of the proviral DNA instead of thymidine. This breaks the nucleotide sequence and disrupts the strand. By its avidity for the viral enzyme, the nucleoside analog AZT acts as DNA chain terminator.

Ribavirin: This is a purine nucleoside analog with activity in cell culture against the wide spectrum of RNA-and-DNA-viruses. In the author's experience, it is effective against murine CMV in cell culture, but was of no benefit in alleviating experimental CMV disease in mice.[11] This antiviral compound is known to block the capping of viral specific messenger RNA at the 5′ position.

In phase 1 and phase 2 trials, ribavirin had been given to AIDS victims in the dose of 600-2400 mgs per day. In treated patients, HIV activity was decreased, but not eliminated during that treatment. It is obvious that both AZT and ribavirin present inhibitory, rather than eradicating antivirals. There were many side effects due to ribavirin: hemolytic anemia seems to be most prominent. In the experience of Kaplan et al, nine patients treated with ribavirin at the 600 mg daily dose showed favorable laboratory indices — HIV culture negativity and increases in T4 lymphocytes after only one month of treatment. However, three of the treated AIDS patients died and two of the five patients with AIDS-related complex (ARC) progressed to AIDS![3] This trial, albeit uncontrolled, is not encouraging.

TREATMENT WITH IMMUNOMODULATING AGENTS

Interleukin-2 (IL2): This lymphokine promotes the activation of the immune response. It is produced by the T4 (helper) lymphocyte and affects the cytotoxic T8 lymphocyte, the Natural Killer (NK) and the B cells. IL2 is decreased in patients with AIDS, relating to the depletion in T4 (helper) lymphocytes. The experience in treating 87 AIDS patients with IL2 at the San Francisco General Hospital has been disappointing: no clinical or immunological benefits were observed.[3] A more optimistic account was given by Dr. Anthony S. Fauci and H. C. Lane of the National Institutes of Health. They treated over 50 patients with IL2. At doses of 2,000,000 units per day, as a continuous infusion, marked increases in the peripheral blood lymphocyte counts were shown. In some cases, this was associated with minor tumor regressions and clearing of HTLV-III (HIV) viremia.[12, 13]

Isoprinosine: This synthetic molecular complex containing inosine increases the proliferative responses of normal human lymphocytes. The drug was administered in a dose of four gs a day for four weeks to four patients with ARC and five patients with AIDS. While there was no effect on the T4/T8 lymphocyte ratios in patients with ARC, isoprinosine enhanced the mitogen induced lymphocyte proliferative responses to phytohemagglutinin and concanavalin A.[14]

Interferon could be also used both as an antitumor agent against Kaposi's sarcoma and as an immunomodulator. In the latter role, "immune interferon" had no clinical effect.[13]

Clinical trials with immune modulators should be completed before rendering an educated judgment regarding their potential. Possibly, an immunomodulator will be an adjunct to antiviral therapy in the future.

SUMMARY

Advances were accomplished in the treatment of AIDS, but no eradicative and/or curative treatment is available. It is not known to which extent will the leading antiretroviral drug, AZT, bring about the control of the relentless succession of opportunistic infections and neoplasias seen in AIDS patients. Likewise, will treatment with AZT in earlier stages of HIV infection, such as the carrier state, delay the progression to AIDS? There are insufficient data relating to AZT in the ARC syndrome, but preliminary results are encouraging. Thus, many answers are missing, but moderate success is now possible in the treatment of AIDS, which was characterized as hopeless until the recent introduction of antiviral therapy. ☐

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COUNSELLING THE PATIENT AT RISK

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Free HIV antibody testing and counselling services have been available in South Carolina county health departments since May 1985. Testing is done only on a voluntary basis with informed consent. Persons screened include homosexuals, bisexuals, IV drug abusers, prostitutes, heterosexuals with more than one partner, blood transfusion recipients, sex partners of high-risk individuals, and the worried well with no risk factors. However, all of these people have the same reason for coming — a fear of AIDS. Because of this fear, counselling before testing is always done to help the patient decide whether or not to be tested. Pre-test counselling includes the patient receiving full information about the purpose of the test, the strengths and limitations of it, the interpretation of either a positive or negative result, and the agency's policy on confidentiality. Many people come with the misconception that the test is a test for AIDS or that it will tell them if they will ever get AIDS. This, as well as other misinformation the patient may have received from newspapers, magazines, and television, must be clarified. Ample time is given for questions and answers. The patient's own risk status of exposure to the virus is assessed as well as his/her health status.

If the patient decides to proceed with testing, a consent form must be signed by the patient (or by the parent or legal guardian in the case of a minor) stating that the patient understands it is not a test for AIDS, that he/she has received verbal and written information about the test, that he/she has had an opportunity to ask questions, and that the test results will be handled confidentially in accordance with DHEC policy and state law.

The blood sample is sent to the DHEC Lab where the Enzyme-Linked Immunosorbent Assay (ELISA) test is performed. If the specimen is positive, a second ELISA test is done and then confirmed with the Western Blot. Test results are received back in the health department within one week to ten days.

To protect the patient's confidentiality, no test results are given by telephone or by mail or to any one other than the person tested. The patient must return in person; this is regardless of whether he/she is seropositive or seronegative. A specially-trained post-test counsellor sees the patient at this return visit. In many instances it will be the same counsellor who provided the pre-test counselling. In the DHEC clinics the counsellor is usually a nurse but in some instances may be a physician, social worker, health educator, or communicable disease investigator. Regardless of who the counsellor is, it is critical that the same information be given to the patient to prevent confusion and suspicion.

On this return visit patients are often very anxious, and a positive test result may produce high levels of shock and anxiety while a negative result may produce euphoria. Because of these reactions all other information the patient receives may be distorted, misunderstood, or not heard at all. Sufficient time must be allowed for the result to be accepted. It is essential to point out that a positive test result does not mean that the

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patient has AIDS nor does it mean that he/she will necessarily develop AIDS or ARC or that he/she is immune to AIDS. A positive test result only shows that antibodies to HIV are present in the blood which indicates he/she has evidently been infected with HIV. It is stressed to the individual that he/she is presumed to be infectious to others and may remain so for life. It is equally important to point out that a negative test result means that no antibodies to HIV were detected in the blood at the time of testing. However, this may be due to the fact that the individual has not been infected with HIV or that he/she has been infected but has not yet produced detectable antibodies. If the patient who tests negative is high risk and/or symptomatic, he/she is advised to re-test in three to six months.

Safer sex and lifestyle behavioral changes are also discussed at the post-test counselling session. If the client is high risk for HIV infectivity these recommendations are the same whether the test results are positive or negative and include:

1. Abstain or limit sex partners, preferably to only one.
2. Use condoms each time you have sex.
3. Avoid sexual acts of any kind in which body fluids are shared ("Body fluids" include blood, semen, urine, feces, saliva, and genital secretions).
4. Watch for possible signs of AIDS.
5. Do not donate blood, plasma, body organs, sperm, or tissue.
6. Do not share toothbrushes, razors, or any other items that may become contaminated with blood.
7. Do not share needles or other drug equipment.
8. For females of child-bearing age, consider the risk to a baby before becoming pregnant. If already pregnant, consult with M.D.
9. If HIV positive let your doctor, dentist, or other health care provider know.
10. Advise sex partners to come for counselling and testing.
11. If HIV positive, see one's physician for a physical examination.

The verbal counselling is supplemented by written information. The AIDS Hotline telephone number and the Palmetto AIDS Life Support Services (PALSS) telephone number are given to serve as a "lifeline" for the patient after he/she leaves. A third visit by the patient may be necessary for repeated counselling of what was previously discussed. Anxiety may be decreased by this time and the test result may have been accepted. Occasionally a sexual partner will accompany the patient on this visit.

For most patients simply providing information and reassurance will be sufficient. However, for the particularly anxious patient who needs more opportunity to talk through his/her fears a referral for professional psychological counselling may be necessary.

AIDS related counselling takes a great deal of time and patience. For many people it will be a reassuring experience while for others it will cause extreme distress. Therefore, it is essential that individuals at risk receive adequate pre-test counselling as well as post-test counselling to help them make decisions which will influence their behavior for the rest of their lives. ☐

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HEALTH EDUCATION IN THE SCHOOLS: THE CURRENT CHALLENGE AND ISSUES

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Decision makers in South Carolina and elsewhere challenge those who endorse comprehensive school health education with two appropriate questions: (1) *why* is health education needed in any public school? and (2) *what* is meant by the term "comprehensive school health education?" I shall address both of these questions.

WHY IS HEALTH EDUCATION NEEDED IN ANY PUBLIC SCHOOL?

The challenge of AIDS and HIV infection only dramatizes the many health problems facing South Carolina's children. Seventy-five percent of our school age children have tooth decay. Up to 10 percent of children under age 17 have elevated blood pressure. Ten percent of our fifth graders report smoking cigarettes, and 19 percent report drinking alcoholic beverages. Our state ranks ninth in the nation in the incidence of teenage pregnancy, with public sector costs alone for teenage mothers and their first babies born in 1984 estimated to be $26,465,470.[1]

Schools, existing to enhance our society, have both a responsibility and an opportunity to protect, maintain, and improve the health of these students. It has now been demonstrated that school health education is an effective means of helping children to improve their health knowledge, develop healthy attitudes, and adopt health-promoting behavior patterns.[2]

I shall address seven issues impacting upon the urgent need for comprehensive health education in our public schools: (1) the shift in disease patterns; (2) rising health care costs; (3) the health information explosion; (4) changing societal trends; (5) the American family in need of support; (6) the earlier biologic maturation of our children; and (7) the adolescent lifestyle with its risk-taking behavior.

Shift in disease patterns. Whereas at the turn of the century a majority of deaths were due to unpredictable infections, today 75 percent of deaths in the United States are due to degenerative diseases. It has been suggested that of the ten leading causes of death, 50 percent are due to unhealthy behavior or lifestyle; 20 percent to environmental factors; 20 percent to human biological factors or genetics; and only 10 percent to inadequacies of health care.[3] Lifestyle choices such as cigarette smoking, alcohol and drug use, occupational hazards, and accidents should be amenable to change.

Rising health care costs. The majority of our health care resources are spent on treatment and crisis intervention. Currently, only four percent of the Federal health care dollar is targeted toward prevention-related activities.

The health information explosion. The acceleration of research in the health sciences and the interest of lay persons in fitness and health issues[4] help to make health awareness a media phenomenon. Unfortunately, the many interpretations and reinterpretations create confusion, leaving many persons with the attitude that "I'll just do what I want to do until the experts finally decide." Health education should prepare students to analyze and interpret data and opinions reported in the media.

Changing societal trends. Americans have evolved from a narrow "either/or" society to an exploding multiple-option society. For example, young couples are now confronted at the time of pregnancy, labor, and delivery with these choices: LaMaze vs. Leboyer, vaginal vs. cesarian section, father-assisted vs. staff-assisted delivery, still pictures vs. full color videos. Students must be prepared to make decisions based on even more profound changes in health care delivery.

The American family in need of support. Three out of five children born today will have lived with a single parent by age 18. Presently, two out of four children age 13 and under live with parents who both work.[6] South Carolina's parents need the support of sound health instructional programs in their task to nurture and develop healthy children. Strong comprehensive health education programs in the schools also promote parental involvement in school curriculum development and program activities, secondarily enhancing parental health and improving parent-child communication.

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Earlier biologic maturation of children. In the 1870's, the average age of menarche was 16.5 years; in 1930, 14.5 years; in 1950, 13.5 years; and in 1980, 12.1 years.[7] While the basis for this physiological shift is unclear, it is obvious that young persons must be prepared for the risks and responsibilities brought on by earlier puberty.

Adolescent lifestyle and risk-taking behavior. Among the tasks of adolescence are developing self-esteem, vocational aspirations, sexual identity, and the ability to be responsibly independent and self-regulating.[8] The confusion brought on by adolescence promotes risk-taking behaviors. Some of these jeopardize longterm health (such as use of cigarettes, drugs, and alcohol and exposure to sexually-transmitted diseases including HIV infection); others predispose to trauma which remains the leading cause of death in this age group. An aim of comprehensive health education is dispelling the "personal fable" of invincibility.

WHAT IS MEANT BY THE TERM "COMPREHENSIVE SCHOOL HEALTH EDUCATION"?

Comprehensive school health education is designed to maintain, reinforce, or enhance the health, health-related skills, and health attitudes and practices of children and youth.[9] Parents and communities must be involved in the planning, implementation, and evaluation of such education, which should begin at school entry and continue through completion of high school (K-12). The three interdependent components of a comprehensive school health program are health education (instruction), health services, and creation of a health-promoting school environment.

Comprehensive health education must not be fragmented or crisis-reactive. It must not emphasize isolated, single-issue content areas such as drug and alcohol education, smoking and health education, sex education, or education about AIDS and HIV infection. The content areas must be balanced, holistic, and appropriate to the age, grade, or developmental level and needs of the students.

The Education Commission of the States recommends ten major content areas as minimum elements of comprehensive school health education.[10] These are as follows:

1. *Personal health:* physical fitness and lifetime physical activities; cardiovascular health; sleep; rest; relaxation; recreation; growth and development; nutrition; oral health; vision and hearing; prevention and control of disease; safety; body systems and their functions; aging; coping with death and dying.

2. *Mental and emotional health:* positive self-concept; personality; emotional stability; responsibility; motivation; independence; mental disorders; coping with stress; mental health services.

3. *Prevention and control of disease:* contribution of early scientists; causes of disease; preventive measures; chronic disease; degenerative disease; communicable disease; immunization; personal health practices; community efforts.

4. *Nutrition:* food choices; elements in food that contribute to good nutrition; factors influencing choices; individual nutritional requirements; food groups and nutrients; food sources; weight control; effects of nutrition on growth and activity; nutritional challenges; food preparation and protection; consumer protection.

5. *Substance use and abuse:* personal goals; individual responsibility; substances beneficial to mankind; classification of substances and their effects on the body; implications of use of substances; how habits are formed and influence health; use and misuse of tobacco, alcohol, and other drugs; treatment and rehabilitation programs; respect for self and others.

6. *Accident prevention and safety:* attitudes toward safety; causes of accidents; home and school safety; traffic (automobile, bicycle, school bus) safety; fire prevention; survival education; environmental hazards; accident prevention — potential hazards; first-aid and emergency health care; safety personnel, resources, and agencies; individual safety precautions; recreational safety;

occupational safety; safety rules, laws, and regulations; legislation.

7. *Community health:* individual responsibility; healthful school, home, and community environment; community health resources and facilities; official and unofficial health agencies; health service careers; pollution control (clean air and water); occupational environments; safety hazards and natural disasters; community involvement as a shared responsibility (health planning).

8. *Consumer health:* individual responsibility; propaganda in advertising; social and economic factors; laws for consumer protection (food labeling); protection agencies; health agencies and organizations; health insurance; selection of medical services; quackery; reliable sources of health information; evaluation of health products and services; use of trained medical personnel.

9. *Environmental health:* environmental pollution; effect of environment on health (radiation; pollution); environmental protection agencies; population density; world health.

10. *Family life education:* family composition and roles; life cycles (human growth and development); the reproductive process; heredity; marriage; selecting a compatible life partner; family relationships; parenting.

CONCLUSIONS

A bill has been introduced to the South Carolina legislature to mandate comprehensive school health education at all grade levels. Physical, mental, and social health issues must be integrated into a comprehensive program of health skills, knowledge, and decision-making in order to be effective. Other professional organizations, following the lead of the South Carolina Medical Association, must marshall a broad base of support to ensure passage of this legislation. □

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PRIVACY, CONFIDENTIALITY, AND AIDS

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At first, that one had AIDS was closely guarded information, kept in confidence sometimes even from other health care personnel working with a patient. The stigma thought to be attached to having the disease was too great to allow for sharing such information. But within a very short time, it was discovered that the disease was doubling the number of its victims every six months, and the Centers for Disease Control (CDC) in Atlanta now project that the number will double again within the next twelve months. In addition, the mortality rate two years after diagnosis now stands at 80 percent.[1] AIDS has assumed the proportions of world-wide health disaster.

While in some respects the issues of confidentiality and privacy are now moot, confidentiality and privacy are still extremely important ethical concerns in the treatment of AIDS.

MANDATORY REPORTING

Legally, virtually every state requires that AIDS victims be reported by name to local public health officials, who in turn report new cases to the CDC. And, as is true of all sexually transmitted diseases (STDs), victims are often asked to provide the names of all their sexual contacts for the purpose of contact tracing. In Montana and Tennessee, however, the reporting of new AIDS cases is still voluntary.

Since March of 1985, enzyme-linked immunosorbent assay (ELISA) tests have been available to determine the presence of the HIV antibodies, and through the use of such tests medical personnel have been able to screen donated blood products and to screen potential donors. The use of these tests has eliminated considerable fear about blood transfusions and the transmission of AIDS via transfusion. A positive antibody test (repeated and confirmed by a Western blot test) indicates that the individual (and the blood) has been infected with the AIDS virus, and even though health officials are currently uncertain what portion of those who are seropositive will actually develop AIDS, evidence suggests that an infected individual has an unlimited (perhaps lifelong) capacity to infect others.

The very availability of such tests, however, has raised many of the privacy and confidentiality issues.

Legally, in addition to requiring the reporting of new cases of AIDS, several states, including South Carolina, require the reporting by name of individuals who test positive for the presence of the HIV antibodies.[2] Given the rapidity with which the disease is spreading, these measures were deemed important both morally and legally to protect potential victims of the disease.

While most guardians of individual liberty and the right to privacy would have little difficulty with reporting procedures required for those who have actually contracted the disease, they have considerably more trouble with the requirements for reporting positive test results. In principle, certainly, state governments have the right to intervene in private sexual behavior in order to protect others from a highly contagious and lethal disease. Hence, one might appeal to the "harm principle" to argue that an AIDS victim's liberty to behave as he or she chooses is justifiably infringed (and one's privacy justifiably invaded) *in this respect,* since having the disease endangers others. Control of the spread of AIDS seems to justify the mandatory reporting of victims by name.

But to what end, and on what grounds, many ask, are those who are merely seropositive being reported by name? For an invasion of one's privacy to be considered morally justified in this context, it must first be established that the reasons for doing so are medically sound.

The STD analogue is not especially helpful in this regard. With other STDs one stands on firmer moral ground in infringing a victim's sexual freedom and invading a victim's privacy (whether through mandatory reporting, contact naming and tracing, or mandatory testing): doing so means forcing a *treatment* on an individual to prevent further spread of the disease. At present, there is no definitive treatment for AIDS and no medical intervention for a positive antibody test.

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Furthermore, being seropositive for HIV is information of unproven diagnostic value. Although many argue, and many are convinced, that it is not safe to assume anything other than that once infected, always infected, and once *infected*, one is *infectious*, the medical evidence is simply not that straightforward. In October of 1985, for example, the *Annals of Internal Medicine* reported the case of a woman who was infected through sexual intercourse with her husband. Informed of her infection, she and her husband began using condoms with the result that her antibodies gradually disappeared. In addition, *current* medical evidence suggests that a minority of those infected will actually develop symptoms.[1] There is the added problem that the test is not infallible.

Many persons who are at risk of contracting AIDS and are in high-risk groups for HIV infection are refusing to be tested, some because they fear the social consequences of mandatory reporting. Since there is no medical intervention for a positive test, they question the rationale behind "keeping a list." Such refusal, obviously, may mean that these individuals are unwittingly continuing the spread of the disease.

For these reasons, many argue that laws requiring the reporting of positive test results are neither legally nor morally justified.

MANDATORY TESTING

Epidemiologists have identified several groups of persons as being at increased risk of HIV infection:

(1) homosexual and bisexual men, (2) present and past IV drug users, (3) persons with clinical or laboratory evidence of infection, (4) persons born in countries where heterosexual transmission is documented, (5) male or female prostitutes and their past and present sex partners, (6) sex partners of infected persons or persons at increased risk, (7) all persons with hemophilia who have received clotting-factor products, and (8) newborn infants of infected or high-risk mothers.[3]

Since testing can reveal that one is seropositive, and *may* be viremic, should testing be required of all those who fall into identifiable "high-risk" groups?

It is one thing to recommend voluntary testing; it is quite another to require it. However, arguing that the spread of AIDS must be checked, some have advocated mandatory testing of everyone; others have advocated testing not only all high-risk persons, but all health care workers, surgeons in particular, all entering medical school students and residents, all entering nursing students, all college freshmen, all food service workers, all prison inmates, all patients admitted to hospitals, etc. The Defense Department has announced that it will screen all active-duty personnel, and perhaps members of their immediate family as well. Insurance companies have advocated screening for HIV prior to insuring new applicants. Many states are considering legislation that would make premarital testing mandatory. The list goes on and on.

Many argue, understandably I think, that since there is no therapeutic intervention for an HIV-positive test, mandatory testing is an invasion of privacy, and further that the money and effort spent on testing and record-keeping would be better spent in research. Since testing can reveal one's diagnosis, they add, if you don't want to know that information, isn't the requirement that you be tested a further invasion of privacy in that it forces your diagnosis on you?

However, in the case of premarital testing, I think the argument in favor of mandatory testing is a stronger one.

Again, the STD analogue is not especially helpful. South Carolina is one of several states which do not require mandatory premarital screening for STDs. STDs can be transmitted to the fetus *in utero*. If the rationale for premarital testing, they argue, is to protect fetal health, then that end is better served when the screening is done either prenatally or within the context of family planning. Unlike AIDS, if the STD is not detected until after conception, there is still a therapeutic intervention available that will benefit both mother and fetus.

AIDS can also be transmitted to the fetus *in utero*. However, if AIDS is detected *in utero*, the only "therapeutic" intervention available to the mother and the fetus is abortion. Inasmuch as the seeking of a marriage license signals an intent to maintain a monogamous sexual relationship, and inasmuch as one of the goals of such heterosexual relationships often is child bearing, it seems a natural juncture in one's chronology for being tested. A potential, innocent third party stands at risk of being harmed. To conceive without electing known safeguards for fetal health seems reproductive and moral irresponsibility. Furthermore, there is legal and moral warrant for the claim that states have an obligation to protect those unable to protect themselves.

QUARANTINE

What about quarantine? Should quarantine be required? Of whom? Should we only quarantine willful spreaders of AIDS? Should we even quarantine them? Or, since AIDS is often spread through a consensual act, should we simply conclude that one who is sexually intimate with a stranger or someone whose sexual history is uncertain implicitly consents to the risk of acquiring AIDS?

Should we require quarantine of school children with AIDS? Many school districts have elected such a "safe" option. Some, like the one in New York, have chosen to admit the students but not identify them. Still others have succumbed to arguments that keeping a child's identity a secret violates the freedom of choice of parents who unwittingly send a child to school with an AIDS victim. Once identified, these children have borne the brunt of society's fear.

From a practical point of view, the case for quarantining all who are infected is obviously weak. With the numbers of the infected placed at between one and two million persons, how could quarantine possibly be accomplished? Further, because AIDS is not spread through casual contact there is no demonstrable public health benefit from isolating the infected. Hence, the case for quarantining anyone other than willful spreaders of the disease seems weaker still.

If policymakers believe that willful spread of AIDS warrants forcible detention, then isn't mandatory testing required to detect those who would be willful spreaders? At what point does the danger to society loom so menacing that we would agree to such an invasion of privacy?

UNRESOLVED ISSUES

Of course, there are still some privacy issues and issues of confidentiality that clearly are not moot. Some of these are issues that arise because of the length of the virus' incubation period,[4] as well as because there is no medical intervention.

US Public Health Service recommendations suggest that victims and those infected be counseled to inform previous sex partners, and any individuals with whom needles were shared, in order to prevent further spread of the disease.[3]

How far back into one's past must a victim reach? Would an unwillingness to do so justify breaching confidentiality? Who has a "right to know?" Does a physician's "right to know" the health status of a patient permit him or her to obtain an antibody test without the patient's knowledge or consent? Such questions suggest an overlap with the many other moral dilemmas created by AIDS.

From a moral point of view, physicians owe a duty of confidentiality to their patients, except in cases where the information a patient reveals poses a significant harm to another. That moral duty is one of the cornerstones of the physician/patient relationship. Furthermore, many states have institutionalized that duty by enacting laws according privilege to communications between physician and patient. These confidentiality statutes are designed in such a way that they protect all who are reported as either infected or infectious.[5]

The case for knowing the antibody status of a patient under one's care seems strong enough to warrant obtaining an antibody test, especially if there is evidence that the patient is at risk of infection, but *not* strong enough to obtain it without a patient's knowledge or consent. And surely, a patient who seeks treatment for his or her illness must have access to as much information as the physician can offer in order to make informed choices about the future. Similarly, the case for telling other health care workers who might be caring for the patient seems a strong one, both in order that they can protect themselves and as a safeguard for other non-infected patients.

However, it does *not* seem redundant to argue that AIDS testing information should not be released to news media, employers, school officials, insurance companies or the like. Since there is no evidence that AIDS is spread through casual contact with a victim, to violate the states' confidentiality rules (or one's moral duty of confidentiality) for these purposes undeservedly harms a victim and is ethically unjustified. ☐

NOTES

1. University Information Associates. Preventing AIDS: Facts and Myths 1986 Edition. Wenonah, NJ.
2. At this writing, only five states (Arizona, Nevada, Colorado, Minnesota, and SC) require the reporting by name of those who test positive for HIV as well as of those actually diagnosed with AIDS. However, such legislation is under consideration in several other states and will, no doubt, be implemented in many of those.
3. MMWR 35: 152-155. March 14, 1986.
4. According to US Public Health Service, September 16, 1985, this is placed at anywhere from six months to five years (and even longer).
5. Currently, South Carolina law recognizes privileged communication concerning STDs only between DHEC and patients so diagnosed. South Carolina law does *not* recognize communications between one's physician and oneself, between one's blood bank and oneself, etc. as privileged.

THE ETHICAL CHALLENGE OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION: PROBLEMS FOR INSTITUTIONS*

JEREMY S. MUSHER, M.D.*

In considering institutional responses to HIV Infection, several ethical considerations need to be addressed. A primary issue involves balancing the rights of individuals to privacy versus the public or institutional "need to know." Under what circumstances does a hospital, university, school system, or employer have a "need to know" the HIV status of one of its members? What reasonable steps should it take to acquire that information? To date, only the military has declared a special "need to know," and since October, 1985, has enforced mandatory HIV antibody testing of all recruits followed later by all active duty personnel. Recently, the United States Surgeon General, C. Everett Koop, came out in favor of testing for HIV antibodies for couples applying for marriage licenses and for hospital patients. Who will have access to this information?

At the beginning of what was rapidly becoming known as the "AIDS Epidemic" in October of 1985, J. O'Neal Humphries, Dean of the University of South Carolina School of Medicine in Columbia, South Carolina, created an AIDS Policy Committee for the School of Medicine. The Committee's responsibility was to draft an *institutional* response to questions raised by HIV infection, AIDS Related Complex (ARC) illnesses, and the Acquired immuno-Deficiency Syndrome (AIDS). Membership of the Committee included physicians, hospital administrators, residents, students, a representative from the South Carolina Department of Health and Environmental Control (DHEC), the American Red Cross Blood Bank in Columbia, and a medical ethicist.

The University Committee confronted the "need to know" question along with its corollary, "mandatory testing," early in its deliberations. Did the University have a "need to know" if any of its employees or students were infected with the HIV virus; and if so, how would that information be used by the institution? The same question was being posed by hospitals. Reasoning deductively, assuming the information was known, would it be necessary to restrict infected students and employees from contact with patients or others? If not, did any other basis exist for the Institution's "need to know?" The Committee reviewed available medical evidence. No documented spread of the virus existed through "casual" contacts, including family members of HIV infected individuals (who presumably had closer and more persistent exposure than patients, fellow employees, or students would have). The Committee decided that generally it was not necessary to restrict contact of HIV infected individuals from others in a hospital or medical school setting. There was, however, one set of specific circumstances which might result in the spread of infection which needed to be addressed. Since only blood and semen have been clearly implicated in the transmission of the virus, surgical procedures where a health care worker might accidentally cut himself and bleed into an open wound of a patient needed to be addressed in the policy report. Again, relying on the absence of any reported cases of contagion by this route, the risks seemed quite low. By following the same procedure for all health care workers under these "at risk" circumstances, there would be no need to prior knowledge of their HIV status. Specific guidelines were formulated for the prevention of transmission of HIV infection from health care workers to patients relying on established infectious disease models.

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If, however, an exposure did take place, either from an HIV patient or one who declined testing, or from an immunologically unknown health care worker, a mechanism for evaluating and following these individuals needed to be established. Originally, the University Committee had plans to establish a "confidential repository" composed of an infectious disease representative from each of the teaching hospitals. All exposed health care workers would receive serologic testing immediately following exposure and at further intervals as recommended. These results would be known only by the exposed individual and the limited membership of the "confidential repository," who would then follow these individuals over time. They would provide referrals for counseling and treatment as indicated. The HIV status of each individual would remain confidential and would not be made known to the University administration. The Committee felt that this limited "need to know" did exist under these special circumstances, both to protect the exposed individual and the Institution. The Institution would be attempting to protect itself from future liability suits by requiring mandatory testing under these circumstances (potential HIV exposures by means of blood or mucus membrane accidents). If a health care worker at some future time claimed he had been infected with HIV while a student or employee, the testing results held by the "confidential repository" would be available. If the tests were all negative, the Institution would be in a better position to raise the issue of exposure from some other source.

The same issues existed under circumstances of a patient claiming exposure by means of a health care worker. The same procedure was recommended to be followed. The need for a "confidential repository" for the results generated by these procedures was obviated in February, 1986, when the South Carolina Department of Health and Environmental Control (DHEC) required reporting of all confirmed positives for HIV antibodies. They, in effect, became the "confidential repository." This strengthened confidentiality for the individuals involved and better preserved their rights to privacy, while maintaining the interests of the University.

Another issue addressed by the Committee involved a student or health care worker's right to refuse to treat an HIV infected patient. Other than the specific exception of pregnancy, where the opportunistic infections harbored by AIDS patients might potentially put a fetus at risk, the Committee overwhelmingly felt it was "not appropriate for health care workers to refuse treatment for patients with HTLV-III (HIV) infection or AIDS. . . ." Exposure to contagions was felt to be an occupational hazard which all health care workers must accept. The dangers inherent in allowing health care workers to refuse to treat AIDS patients were felt to be too great. The potential disruption to patient care and reduction in confidence by the public in the hospital as an institution would be at risk. On the other hand, proper infectious disease precautions were thought to provide adequate protection to health care workers. Thus their risk was judged to be small.

In discussing the ethical dilemmas involved in the right to refuse to treat as well as other issues, a recurring need for educational efforts became clear. The University and its affiliated hospitals had an obligation to educate students, employees, patients, and the public at large. At a time when much misinformation was being disseminated, the University accepted as its Institutional obligation the responsibility to educate. Specific recommendations were made regarding the education of health care workers in the pathophysiology of HIV associated infections as well as the infectious disease techniques to prevent nosocomial transmissions of the virus.

While the University Committee was making decisions, other institutions, particularly school boards and corporations, were establishing policies engendering strong community reactions and requiring judicial arbitration. Children with AIDS were being barred from attending school in some communities and employers were supported by the courts in removing employees with AIDS solely on the basis of fear of contagion. Some institutions were responding to a fearful populace and acting precipitously in setting restrictive policies before relevant information was available from the medical community, or in some cases where this information was available it was being ignored or misunderstood. Faced with the ethical dilemma of restricting the individual civil rights of HIV infected individuals or running an unknown but presumably low risk of transmitting the virus to others, these institutions were choosing a perhaps overly protective stance for the general public.

In summary, institutions face several ethical challenges in confronting HIV infection. Institutions' "need to know" must be carefully considered and weighed against individuals' rights to privacy. The protection of both patients and health care workers from possible nosocomial exposure to HIV infection must be maximized, but not to the extent that insufficient staff are available to perform the primary function of health care workers, that of caring for the sick, including those with HIV infection, ARC, and AIDS. Finally, medical universities and hospitals, in particular, have an institutional obligation to educate students, patients, employees and the public in general with the most up-to-date medical information available regarding HIV infection. Only in this way can they meet their ethical responsibility to replace rumor with fact and bring specialized knowledge to bear on other institutions' decision-making regarding policies and procedures affecting HIV infected individuals. ☐

SUMMARY

CHARLES S. BRYAN, M.D.*

In this symposium, we have reviewed some current issues concerning AIDS and HIV infection especially as they impact upon South Carolinians. Dr. Clark Heath described the composition of the South Carolina AIDS/HIV Task Force and its four areas of function: epidemiology, health care, health education, and legislation. Predicting that by 1991 there will be nearly 2,000 cases of AIDS and 118,340 cases of HIV infection in South Carolina, he predicted an eight-fold increase in the levels of hospital, outpatient, and hospice services. He emphasized the pressing need for education as a preventive measure, and for legislation to improve our ability to deal effectively with this growing public menace.

Dr. John Rullan described the current epidemiology of AIDS and HIV infection in South Carolina. Although cases of AIDS have been especially concentrated in Charleston and Richland counties, the disease is widespread throughout our state. Nearly 60 percent of counties have reported at least one case of AIDS. Both AIDS and HIV infection have occurred predominantly among males (93 percent and 92 percent, respectively) and disproportionately among blacks. Among white males with AIDS, homosexuality has been the major risk factor; among black males, intravenous drug abuse has also been an important risk factor. Five cases of AIDS have been reported in children in our state. Dr. Rullan concluded that HIV infection within South Carolina remains contained among the high risk groups, but noted that heterosexual transmission seems to be becoming more important.

Dr. Preston Holley reviewed the clinical spectrum of HIV infection, using the CDC classification. Although acute infection by the virus is usually asymptomatic, it may present as a mononucleosis-like illness. Seroconversion from negative to positive HIV status generally requires two to eight weeks. Asymptomatic patients with HIV infection may have laboratory abnormalities such as lymphocytopenia or thrombocytopenia. Persistent generalized lymphadenopathy is a common manifestation of the so-called AIDS-related complex (ARC), and such patients may also exhibit certain conditions such as oral candidiasis, multidermatomal *Herpes zoster*, and oral hairy leukoplakia (category C-2). AIDS is defined by the diagnosis of one of 12 specific infections (*Pneumocystis carinii* pneumonia being the most common) or of one of three specific tumors (Kaposi's sarcoma being the most common) in an HIV-positive individual. Finally, certain patients will have "other conditions," and it is clear that this group will expand.

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Dr. Bosko Postic reviewed the clinical management of the AIDS patient. Effective therapy exists for most of the AIDS-defining opportunistic infections (disseminated *Mycobacterium avium-intracelluare* infection and cryptosporidiosis being the major exceptions). In nearly all instances, however, therapy is less successful than in non-immunocompromised hosts. The antiviral drug, zidovudine (Retrovir — formerly known as azidothymidine or AZT) has recently been released for general use. Whether therapy with AZT in the earlier stages of HIV infection will delay or prevent the development of AIDS is currently unknown.

Linda Buster provided information regarding the HIV antibody testing and counselling services offered through the DHEC Health Department Clinics. She emphasized that "AIDS related counselling takes a great deal of time and patience." Advice regarding the transmission and symptoms of HIV infection is given to all high-risk clients, irrespective of their test results. She noted that such information is necessary to help these persons "make decisions which will influence their behavior for the rest of their lives."

Cheryl Moore Adamson summarized the urgent need for health education in South Carolina's public schools. She emphasized that such education must be *comprehensive* and not single issue- or crisis-oriented. The Health Education of the States proposes, as minimum elements for school health education, ten major content areas. Thus, family life education is but one of these ten areas, and the reproductive process is but one area of family life education. Emotional reactions to "sex education in the schools" should not obscure the need for such *comprehensive* health education — a point which has been repeatedly emphasized by the South Carolina Medical Association.

Nora K. Bell, a medical ethicist, discussed the issues of privacy and confidentiality. She reviewed the arguments made by many persons that the laws mandating the reporting of positive test results are neither legally nor morally justified. She did suggest, however, that a case can be made for mandatory premarital testing. She suggests that HIV antibody testing should *not* be obtained without a patient's knowledge or consent. It is clear that, from an ethical point of view, there continue to be numerous unresolved issues.

Finally, Jeremy S. Musher provided a perspective on the problems presented to institutions, drawing from his experience as chairman of the AIDS Policy Committee of the University of South Carolina School of Medicine. He reviewed the problems of confidentiality, concluding that "the institution's 'need to know' must be carefully considered and weighed against individuals' rights to privacy." He emphasized that hospitals and medical schools should assume a leadership role in educating their students, patients, employees, and the general public about AIDS and HIV infection.

The same week that this symposium took place in Charleston at the 139th annual meeting of the South Carolina Medical Association, Billy Graham was conducting his Carolina Crusade in Columbia. The famous evangelist called AIDS "the worst epidemic in history." We cannot know whether future historians will agree — or even (given the perils of our times) whether there will *be* future historians. However, we can predict that such historians would be likely to judge the institutions of our day, in part, on the basis of how they responded to this epidemic. We must join forces with government and with all segments of society to contain the problems of AIDS and HIV infection to the fullest extent possible. □

Editorial

AIDS POLICIES

Future historians should have a field day. The historians of science will ask who *really* deserved credit for isolating the virus, for designing the drugs, or (we hope) for developing the vaccines. Who *really* deserved the Nobel prizes? The political historians will debate to what extent AIDS, like so many infectious diseases before it, changed the course of history. The social historians will grapple with the impact on society's institutions — and they will measure these institutions in part by their response to the menace. All of these issues will entertain medical historians, who will also want to know how the AIDS epidemic may have altered medicine as a profession.

Certain signs are on the wall. Consider, for example, the notion that members of a profession differ from laymen by possession of a body of unique, esoteric information. Not long ago, new information came to us through our little-publicized meetings and journals, couched in our own esoteric vocabulary. Today, laymen are likely to obtain new information about AIDS even before the specialist by paying attention to radio, television, or *The Wall Street Journal.* Consider also the notion that a profession is defined by its members' authority. Even our authority to request a laboratory test without first obtaining informed consent is at issue. Not only do we lack all of the answers; it seems likely that we have not even asked all of the relevant questions.

Among the many phenomena spawned by the epidemic has been the desire of most institutions to formulate "AIDS policies." What precautions should be taken? What persons, if any, should be tested for HIV seropositivity? Who should know the results of such testing? What kinds of education are appropriate? Is quarantine a viable alternative? In this issue, Dr. Jeremy Musher reviews the problems faced by institutions from the perspective of having supervised the formulation of such a policy at a medical school. The "AIDS policy" was concluded to be an *ongoing* concern, since new information or new legislation might dramatically alter some of its components.

However, one lesson for our species should be the need for each of us to formulate and adhere to *personal policies.* It is unfortunate that most of us never received assertiveness training during our school years, since such training teaches the values of policies for the individual. For example, it is much easier to deal with the telephone solicitor who interrupts your evening meal if you can state (as a conditioned reflex): "I'm sorry, but my *policy* is not to deal with telephone solicitations of any kind. Good luck elsewhere." *Policy* closes the door, denying the other party the chance to negotiate.

Should we not encourage our children to develop such policies ("My policy is not to use illicit drugs of any kind;" "My policy is not to indulge in sex before I'm married")? Should we not adhere to such policies ourselves ("My policy is to be faithful to my spouse")? And should we not teach the value of such policies to our patients? Would the epidemic have occurred at all had our species insisted upon the old-fashioned virtues?

Although AIDS is new, many of its challenges are not. If the AIDS/HIV epidemic contains even a tiny measure of redeeming value, perhaps it is the re-kindling of the question — so often debated among the ancient Greeks and Hebrews but somehow forgotten during our own time — of what it really means to be a *good person.* And is not such a person, throughout all of the collective wisdom of the ages, ultimately defined by adherence to a set of fundamentally sound *personal policies*?

— CSB

LETTERS TO THE EDITOR

To the Editor:

Dr. John A. Gastright's article ("Medical Practice and the HMO" — December 1986 issue of *The Journal*) accurately describes some of the characteristics of HMOs, particularly the gatekeeper model. However, I feel the need to disagree with some of his assertions.

First of all, I must address what seem to be errors in the last paragraph of the article. Dr. Gastright asserts that HMOs do not seek to alter the way physicians practice medicine. He says that "the HMO does not wish to direct the physician in the manner in which he renders health care." How can Dr. Gastright get away with making that kind of assertion? He admits that "there are incentives to consider cost effective delivery of care. . . ." Well, if that isn't an attempt to change the way physicians practice medicine, then what is it? This series of contradictory statements, doubletalk, and obfuscation is disturbing to me.

HMOs cannot possibly lower health care costs unless they change the manner in which physicians provide medical services to their patients. If no change occurs, then no money is saved (except for the lowering of physician's fees).

It is true that HMOs put disclaimers in their contracts which deny that the HMO wishes to direct the physician's manner of providing health care. I am surprised that this type of statement is not considered misleading, for it attempts to deny the existence of a wish that, in fact, exists. If HMOs do not wish to change the physician's manner of providing services, then why do they include financial incentives for physicians to decrease services? The answer seems to be that HMOs don't want to accept responsibility for behavior that they encourage. It's nice to have the best of both worlds, but physicians are left holding the liability bag. In a gatekeeper system, the primary physician is the one who is really left out in the cold.

How can HMOs cut down on unnecessary medical services without also cutting down on necessary medical services? Is it possible? Dr. Gastright's article did not mention this issue, but it is an important one that needs to be discussed.

Are HMOs a good idea for physicians and patients? I will not attempt to answer that question. HMOs are here to stay. I think that all physicians should hope that their patients become fully informed about all aspects of an insurance policy before deciding whether or not to sign up. I totally agree with Dr. Charles S. Bryan's statement in his editorial that "For the first time in recent memory, physicians have incentives to save money rather than to provide the best possible medical care. We can anticipate enormous conflicts not only with third parties but also with patients, with each other, and with our own consciences."

David C. Morris, M.D.
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Dr. Morris' letter was referred to Gastright, whose response follows:

Dr. David C. Morris has raised issue with the statement that HMOs do not wish to alter the way physicians practice medicine. His contention is, in fact, that HMOs do desire to change the nature of the practice of medicine. In reality, Dr. Dorn's position versus the statement in my December article represents degrees not absolute. Dr. Morris is correct. HMOs do attempt to modify physician decision-making in the extent that they encourage the election of least costly modalities in rendering medical care. However, the essential components of diagnosis, treatment and management remain steadfast. There are, in fact, wide variations in practice patterns within our state. The course from presenting complaints to resolved problem might cover many latitudes. The end result however is often the same. The modifications sought by HMOs are not to alter either the presenting complaint nor the solution but rather the selection of the most efficient clinical decision process. Thus, HMOs do not alter the way physicians practice medicine. They do, however, encourage the efficient practice of medicine.

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FETAL ECHOCARDIOGRAPHY: INITIAL EXPERIENCE WITH 100 CASES*

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EDGAR O. HORGER, M.D.
JAMES P. VAN DORSTEN, M.D.
CHARLES H. KLINE, RDMS

Recent increased interest in the detection of fetal cardiac disease in utero has led to the identification and evaluation of "high risk" pregnancies.[1] The development of fetal echocardiography has allowed for intrauterine diagnosis of serious congenital malformations and arrhythmias, and neonatal management before the full symptomatic expression of potentially devastating cardiac lesions.[2, 3]

This report describes the use of fetal echocardiography for the diagnosis of intrauterine fetal cardiac rhythm disturbances and structural heart defects in a two-year experience with 100 patients.

MATERIALS AND METHODS

From October 1984 to September 1986 a prospective evaluation of fetuses at high risk for cardiac disease was begun at the South Carolina Children's Heart Center. Obstetricians were encouraged to refer patients if they were concerned about fetal heart disease.

Examinations were performed utilizing either an Advanced Technical Laboratories (ATL) model 600 two dimensional sector scanner with a 3 MHz transducer, or an ATL Ultramark 8 with 5MHz annular phased array sector scanning transducer.

In some cases, Pulsed Doppler echocardiographic examination was also performed to evaluate abnormal blood flow patterns and valvular incompetence.

RESULTS

One hundred women have undergone fetal echocardiography at this institution. The gestational ages ranged from 16 to 39 weeks (median=30).

The indications for echocardiographic examination are listed in Table 1. The most frequent reason for examination was the detection of a fetal arrhythmia by the referring physician, 38/100 (38%) patients. Thirty-six out of 38 (95%) of these had normal cardiac structure and contractility. The remaining two showed both arrhythmia and congenital heart disease. The presence of an arrhythmia was confirmed in 21 of the 38 patients.

Seven out of 38 (18%) patients had arrhythmia documented at initial examination. Two patients required administration of medication (digoxin) to the mother, one with atrial flutter with a 2:1

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* From the South Carolina Children's Heart Center, Division of Pediatric Cardiology and Department of Obstetrics and Gynecology, Medical University of South Carolina, 171 Ashley Avenue, Charleston, S. C. 29425.

TABLE 1

REFERRAL DIAGNOSIS	
1. Arrhythmia	
A. Other (nonspecific)	30
B. Bradycardia	5
C. Tachycardia	3
2. Maternal Ingestion	
A. Dilantin	4
B. Alcohol	2
C. Drugs (nonspecified)	2
D. Lithium	2
E. Diet Pills	1
F. Valproic Acid	1
3. Family History of Congenital Heart Disease	
A. Sibling Affected	23
B. Mother's Rel. Affected	6
C. Mother Affected	4
4. Maternal Disease	
A. Diabetes	12
B. Polyhydramnios	1
C. Chorioangioma	1
D. Breast Cancer	1
E. Rheumatoid Arthritis/Prednisone & Naproxen treatment	1
5. Fetal Diseases	
A. Hydrocephalus	1

ECHOCARDIOGRAPHIC DIAGNOSIS	
1. Normal	72
2. Arrhythmia*	
A. Premature contractions	10
B. Sinus Pause	4
C. Bradycardia	3
D. Atrial Flutter	1
E. Supraventricular tachycardia	1
3. Fetal Diseases	
A. Hydrops w/intrauterine death	1
B. Pericardial Effusion	2
4. Congenital Heart Disease	
A. VSD	1
B. Aortic and Mitral Atresia	1
C. Hypoplastic Right Ventricle w/pulmonary atresia	1
D. Tricuspid Atresia, truncus arteriosus, interrupted aortic arch	1
E. *Single Ventricle, A-V canal, Single A-V valve, bradycardia	1
F. *Cardiomyopathy, A-V valve regurgitation, complete A-V block	1

* Two arrhythmias included under Congenital Heart Disease.

block, and a ventricular rate of over 200 beats per minute. Digoxin led to intrauterine control of the arrhythmia. Another patient had episodic supraventricular tachycardia with a heart rate of 250 BPM. Digoxin treatment also controlled this tachycardia. Ten patients had single premature contractions, five of which resolved spontaneously before birth.

Fourteen out of 38 (37%) had persistent arrhythmia until birth or intrauterine death. Five patients had premature contractions. The arrhythmia in two of the five infants resolved without medical intervention within the first two weeks of life. One child was found to have bigeminal premature contractions at birth and was treated with Digoxin until age nine months, at which time the bigeminal rhythm resolved. The remaining two cases were lost to medical follow-up. Four cases of sinus pause were documented. Two of these resolved without medical intervention. One patient was a child born with intrauterine growth retardation whose mother had a history of substance abuse. One case was lost to medical follow-up.

Five patients were referred for fetal bradycardia (i.e. heart rate below 100 beats per minute) with heart rates of 55 to 90 (mean=80). One patient had complete AV block with a ventricular rate of 50 to 55 beats per minute. She also had severe biventricular dysfunction with apparent hypertrophy, tricuspid and mitral valve regurgitation by Doppler echocardiography and pericardial effusion demonstrated at 27 weeks gestation. The fetus died in utero at 31 weeks. At autopsy the heart was primitive with severely abnormal trabeculated muscle tissue, a complete AV canal with a dysplastic incompetent AV valve structure and bilateral superior vena cavae. In a second case, the fetus of a diabetic mother presented with sustained bradycardia of between 80 and 90 beats per minute at 36 weeks gestation. Only a single AV canal could be visualized and echocardiography at birth documented the presence of a single atrio-ventricular valve of AV canal type, a single atrium and single ventricle. A third case presented with episodic ventricular bradycardia with a 2:1 block and intermittent atrial bradycardia with pericardial effusion demonstrated by echo at 19 weeks gestation. Reexamination at 36 weeks gestation showed normal cardiac structure and no detectable arrhythmia. At birth, the referring physicians found the remaining two of the five to be normal.

The second most frequent referral was for a positive family history for congenital heart disease (see Table). Thirty-three of 100 (33%) mothers had a history of either a previous child (23/33), mother's relative (6/33) or the mother herself (4/33) having congenital heart disease. Three of the 33 (9%) were found to have documented congenital heart disease. One of these had a large ventricular septal defect (VSD) demonstrated at 27 weeks gestation and confirmed at birth. The patient also had an imperforate anus and required urgent surgery after birth. The second patient had a hypoplastic right ventricle and tricuspid valve, with pulmonary atresia demonstrated at 38 weeks gestation. The diagnosis was confirmed within one hour of birth, at which time prostaglandin therapy used to maintain a patent ductus arteriosis. This child underwent cardiac catheterization and cardiac surgery within 24 hours of birth. The third fetus had a hypoplastic left ventricle with mitral and aortic atresia diagnosed at 35 weeks gestation. This mother had previously given birth to a similarly affected child. The presence of the malformation was confirmed at birth by echocardiography.

Twelve mothers (12%) were referred for echo after fetal drug exposure (see Table 1). All had normal cardiac anatomy and function.

Maternal disease accounted for 17/100 (17%) of the referrals, the most frequent being diabetes mellitus 12/17 (71%). Eleven out of 12 (92%) of these were normal. The twelfth patient had a small posterior pericardial effusion which later resolved. The mother of the fetus referred for bradycardia in whom only a single AV valve was present was also a diabetic, but this was not the primary reason for referral.

One mother had rheumatoid arthritis and was treated with prednisone and naproxen during the first trimester of pregnancy. Fetal echo showed tricuspid valve atresia with a ventricular septal defect, transposition of the great vessels, mild pulmonary stenosis and an interrupted aortic arch. This was confirmed at birth.

One referral was for non-immune hydrops fetalis. Echo exam at 30 weeks gestation showed intrauterine death. Fetal echo of one mother with chorioangioma of the placenta showed moderate pericardial effusion, mild right ventricular dilitation and tricuspid incompetence at 28 weeks gestation. This was confirmed at birth. The remaining two referrals in this group were for polyhydramnios and breast cancer. Both exams showed normal structure and function.

The final referral was for hydrocephalus. This fetus also showed normal cardiac structure and function.

DISCUSSION

Fetal echocardiographic examination of the child at high risk of acquired or congenital heart disease provides unique and critical diagnostic information. From the data presented here, application of the criteria proposed by Reed and Sahn[1] in this series of 100 patients has yielded five cases of major structural cardiac malformations and five cases in which a significant arrhythmia was present.

Fetal arrhythmia noted by the obstetrician must be defined, as treatment in utero may prevent the birth of a moribund hydropic infant. Single premature beats are predominantly atrial contractions, and when noted in early gestation tend to resolve by term.[3] This observation was confirmed in this study. Supraventricular tachycardia or atrial flutter however must be vigorously treated to avoid the development of a hydropic infant.[4] Paroxysmal supraventricular tachycardia should likewise be treated, as the frequency of tachycardic episodes cannot be determined without continuous monitoring.

Bradycardia with sustained heart rates below 100 beats per minute are a serious occurrence at any age of gestation and frequently indicates congenital complete heart block.[5] The accompaniment of fetal hydrops indicates severe distress due to inadequate cardiac output. The association of bradycardia and congenital heart disease in two patients in this study underlines the necessity for all patients with bradycardia to undergo detailed fetal echocardiography. Brief non-sustained episodes of bradycardia during early gestation appear to be benign.[5]

The families in which congenital heart disease has already occurred present several unique problems. Recent data suggest that if the pregnant mother herself has a congenital heart defect her offspring may have as high as an 8.8 to 16 percent increased risk of a heart defect.[6, 7] Similarly, if she has had a previously affected child her second offspring is at an increased risk of congenital heart disease.[8] This increased risk appears to be highest in left sided obstructive lesions[9] such as in the case reported here. The detection of fetal cardiac malformations is of paramount importance prior to birth, as a patent ductus arteriosis may be the only source of pulmonary or systemic blood flow. In two cases reported in our study, i.e., that of a hypoplastic right ventricle and of tricuspid atresia with interrupted aortic arch, prostaglandin therapy was begun within hours of birth allowing both children to survive cardiac catheterization and surgery in optimal condition.

Fetal exposure during early pregnancy to a cardiac teratogen such as dilantin, lithium or prednisone is a documented concern.[5] Teratogenic exposure in the first trimester has been shown to be associated with certain heart defects. Early detection and discontinuation as well as proper prenatal counseling is important.

Maternal disease such as diabetes is also associated with an increased frequency of congenital heart disease.[10] In this study, maternal diabetes and rheumatoid arthritis were both associated with offspring having congenital heart disease.

The pre-delivery anxiety of the mother whose life has already been affected by the death of a child with a serious heart defect can virtually be eliminated early in the pregnancy by the demonstration of normal cardiac anatomy. This benefit was clearly observed by us in this study and provided immeasurable comfort to many such families.

Extensive training and experience in fetal echocardiography is essential before an accurate diagnosis can be made. In this institution, by 16 weeks gestation complete anatomic definition is usually achieved. Only one false negative fetal echocardiogram has occurred. At birth one child reported as normal was found to have a small ventricular septal defect. There have been no false positive fetal studies.

Abnormalities of prenatal life such as fetal arrhythmias or nonimmune hydrops fetalis can alert an obstetrician to the possibility of congenital heart disease and the need for further screening by echocardiography. Fetal echocardiography provides a noninvasive way for diagnosing an abnormal rhythm as well as analyzing the fetal response to in utero therapy. Diagnosis of a heart defect is helpful in the prenatal and neonatal management as well as selecting the timing and mode of delivery.

SUMMARY

Fetal echocardiography can be used for the accurate diagnosis of both fetal arrhythmia and congenital heart disease. While it is unrealistic to include fetal echo as a routine part of all obstetrical exams, it is both important and beneficial in the high risk populations. This requires good collaboration between obstetricians in the community who perform ultrasound screening exams and the pediatric cardiologist performing the fetal echo, and results in optimal perinatal cardiac care. ☐

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Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

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PARANEOPLASTIC SYNDROMES ASSOCIATED WITH RENAL CELL CARCINOMA

SUZAN L. ROSENBLUM*

Paraneoplastic syndromes are described as symptom complexes that occur in patients with cancer and which are not easily explained. These syndromes may occur by local extension or by distant spread of the tumor. These may also occur by the production of hormones or hormone-like substances native to the tissue from which the tumor originated. Paraneoplastic syndromes may be the first sign of an occult or very small neoplasm and are also noted to occur in approximately 15 percent of patients with advanced malignant carcinoma.[1].

Renal cell carcinoma (RCC) is a somewhat common urologic malignant tumor in adults with approximately 20,000 new cases in 1985.[2] This tumor has a male:female ratio of 2:1 and is more common in urban areas. Familial cases have been reported. For example, those patients with von Hippel-Lindau disease and polycystic kidney disease have a higher incidence of RCC. Renal cell carcinoma is most commonly seen in the fifth to seventh decades, but may also occur in younger individuals. This tumor appears to arise from the proximal convoluted tubule. No specific etiologic agents have been found to be causative of RCC; yet, tobacco has been suggested as a possible agent in men. The mainstay of treatment is surgical, and survival is greatly improved if RCC is diagnosed before the occurrence of metastatic spread.[3]

The clinical presentation of RCC has often been described as the classical triad of hematuria, pain, and flank mass; however, this is present in less than one-third of all patients. Because this triad is caused by tumor obstructing or invading surrounding areas, the presence of such a triad usually indicates advanced disease. Other nonspecific findings may include weight loss, night sweats, anemia, fever, and an acute development of a varicocele in the male.[3] RCC has often been known as the "great mimicker" because of its unusual presentations or paraneoplastic syndromes. These range from the more common ones such as hypercalcemia, hepatic dysfunction, erythrocytosis, and hypertension; but may also include more rare syndromes such as acquired dysfibrinogenemia, systemic amyloidosis and bilateral diaphragmatic paralysis.

The most common paraneoplastic syndrome associated with RCC is reversible hepatic dysfunction. This may be present in nearly 20 percent of patients in the absence of metastatic disease to the liver. A clinical triad of fever, fatigue and weight loss associated with abnormal liver function tests should make one aware of the possibility of RCC. This syndrome is also characterized by diffuse, nontender, non-nodular hepatomegaly without jaundice, prolonged prothrombin time, elevated alkaline phosphatase levels, increased sulfobromophthalein retention, elevated serum bilirubin (indirect), increased α-2 globulin on electrophoresis, and, on occasion, elevated serum haptoglobin levels.[4] At operation, the liver is often found to be enlarged, but otherwise normal. Liver biopsies reveal a non-specific reactive hepatitis with degenerative changes of the hepatic cells, increased lipofuscin, and occasional signs of regeneration. The etiology of this hepatic dysfunction and the triad of the symptoms with which it is so often associated remains unclear. The presence of a humoral substance has been suggested, but no such substance has yet been found. The prognostic significance of these abnormal liver function tests is not clear. Liver function may return to normal after the removal of the primary lesion; however, the majority of patients with this syndrome have a zero percent five-year survival rate due to metastatic dissemination unless the liver function tests return to normal following nephrectomy and the associated symptoms disappear.[5]

Another common paraneoplastic syndrome associated with RCC is hypercalcemia in the ab-

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sence of bony metastases, bone resorption, or new bone formation. Bone from such patients is histologically and roentgenographically normal; yet, increased metabolic rates have been noted as is seen with hyperparathyroidism. The clinical and laboratory findings also resemble primary hyperparathyroidism. This hypercalcemia may sometimes explain the presenting symptoms of weight loss, fatigue and weakness. The identification of a parathyroid-like hormone indistinguishable from parathyroid hormone in the tumor is very suggestive that the tumor itself is actually generating large amounts of biologically active hormone. Other findings include hypophosphatemia, elevated alkaline phosphatase levels, evidence of regression of the patients' parathyroid glands, and a correlation between the increasing size of pulmonary metastases with increasing serum calcium levels. Patients usually have a rapidly progressive course with the serum calcium levels rising quickly and associated morbid sequelae, all of which is not consistent with the more benign, chronic course normally seen with parathyroid adenoma or hyperplasia. Also, signs and symptoms of prolonged hypercalcemia are characteristically absent, such as nephrolithiasis or ectopic calcification. Because of a somewhat high occurrence of RCC in hypercalcemia of unknown etiology, an intravenous pyelogram should be performed in patients with hypercalcemia if the diagnosis of primary hyperparathyroidism is not certain.[6]

The largest group of tumors described to have been associated with erythrocytosis is RCC. This erythrocytosis may be the result of increased erythropoietin production or a biologically analogous substance produced by the tumor cells. The erythropoietin may be produced by the remaining normal kidney tissue, but this has not been found to be the usual case. To date, the best explanation and hypothesis is that the tumor and metastases produce an erythropoiesis-stimulating factor that is probably identical to erythropoietin. A normal or slightly enlarged spleen is consistently found in paraneoplastic erythrocytosis of RCC versus the characteristic finding of splenomegaly in polycythemia vera. The bone marrow may in many cases reveal an erythroid hyperplasia. Increased reticulocyte counts have also been reported. A normal leukocyte count is generally the rule in paraneoplastic erythrocytosis. The erythrocyte sedimentation rate, which is usually low in those with polycythemia vera, is elevated in these cases, thus raising the suspicion of RCC. In most cases, the erythrocytosis resolves following nephrectomy and returns only with the presence of metastatic disease, thus supporting the evidence of a production of an erythropoietin-like substance by the tumor cells.[12]

Severe hypertension might also be the result of RCC for many different reasons and, when this occurs, the prognosis is thought to be poor. Direct involvement of the renal artery by the tumor or extrinsic compression is uncommon. One cause of this hypertension may be due to arteriovenous shunts with a high cardiac output resulting from the great vascularity of the tumor. Polycythemia may also contribute to the hypertension. More commonly though is the evidence of a pressor substance produced by the RCC, which was found to be enzyme indistinguishable from renin. Also, Sufrin et al (1977) noted that peripheral vein renin levels may be found to be elevated in patients with high-stage and high-grade forms of RCC. These patients present with severe hypertension and hypokalemia; thus pointing to primary hyperaldosteronism as the cause. However, high circulating levels of renin, renin activity, or angiotensin II argue against this diagnosis. Once treated by nephrectomy, the blood pressure and plasma renin levels may return to normal.[7]

A more recent paraneoplastic syndrome associated with RCC is acquired dysfibrinogenemia. In a report by Dawson et al[8], the course of a patient who, at the time of diagnosis of nonmetastatic RCC, had dysfibrinogenemia was described. The dysfibrinogenemia was characterized by prolonged thrombin and Reptilase times and elevated sialic content of the purified fibrinogen. Following nephrectomy, the thrombin and Reptilase times returned to normal; yet, they became elevated again with the discovery of nonhepatic metastatic disease. It has been hypothesized that this syndrome is the result of an abnormal fibrinogen molecule. Only when the metastatic disease became more prominent did other signs of hepatic dysfunction become obvious, such as hypoalbuminemia and elevated alkaline phosphatase levels. This patient's data were consistent with the hepatic dysfunction syndrome and acquired dysfibrinogenemia, both of which are potentially reversible upon removal of the primary tumor.

Thus, a conclusion can be made that acquired dysfibrinogenemia may be a part of a paraneoplastic syndrome and may also be a very sensitive plasma marker for the occurrence of metastatic disease.[8]

Systemic amyloidosis is another syndrome with which RCC is associated. In fact, RCC is the most common nonlymphoid solid tumor associated with systemic amyloidosis. It has a frequency of approximately two to three percent, equal to that of polycythemia and RCC. The organ distribution is characteristic of secondary or reactive amyloidosis with major involvement of the liver, spleen, kidneys, and adrenals. The amyloid substance found in these cases (serum AA protein) is the same as that found in amyloidosis associated with chronic inflammatory diseases. The etiology is unknown, but it has been proposed that due to the somewhat slow growth and frequent necroses of RCC, there is a more prolonged stimulation of the monocyte-macrophage system, and thus, synthesis of serum AA protein. However, equally high serum levels of AA protein have been noted in patients with RCC and no evidence of systemic amyloidosis. It may also be possible that an extra stimulus, such as chronic inflammation, be necessary for the development of amyloidosis associated with RCC. It has been concluded that due to the relatively high frequency of associated systemic amyloidosis with RCC, a routine Congo red staining of sections of removed carcinoma tissue be performed.[9]

Autoimmune hemolytic anemia (AIHA) has often been associated with many diseases, but rarely with carcinoma. Refractory normochromic, normocytic anemia is a frequent hematologic finding in RCC, yet AIHA is an extremely rare finding. Recently, four cases of AIHA have been described as occurring in patients with RCC. Although most cases of AIHA in patients with solid tumors are due to a warm-reacting antibody, the most recently reported case of RCC and AIHA revealed serological findings consistent with cold-antibody mediated hemolysis. The mechanism by which a carcinoma may induce autoimmune hemolysis is unknown. Several hypotheses have been suggested including the production of red cell autoantibodies by the tumor, cross-reacting antibodies, a disturbance of immunoregulation, and the presence of immune complex deposits on the membranes of red blood cells. In two of the patients reported with RCC and AIHA, the hematocrit level rose, the hematologic values all returned to normal, and the direct Coombs' test became negative following nephrectomy. Yet, in one patient, a weakly positive direct Coombs' test and hemolysis returned and was associated with metastatic disease to the lung. Steroid therapy with prednisone showed improvement of the hematocrit level and may be effective in controlling the hemolysis; yet, the autoantibody may remain.[11]

Another possible paraneoplastic syndrome associated with RCC is that of bilateral diaphragmatic paralysis. In a report by Thomas et al,[10] a patient was described as having bilateral diaphragmatic paralysis who died 18 months after the initial presentation. This patient was also found to have RCC. At autopsy, no tumor was discovered in the thorax to explain the diaphragmatic paralysis. Neurogenic atrophy was found in the diaphragm, and focal axonal degeneration was identified in only one phrenic nerve. There was no evidence of demyelination of inflammatory infiltrate to suggest a viral origin. This case may fall into a broad category of paraneoplastic neuromyopathies that have long been described, such as sensorimotor deficits that are usually acute and severe and may appear very early in the course of the disease or even before the tumor has been diagnosed. Nonetheless, this case may represent a unique paraneoplastic syndrome secondary to RCC.[10]

In addition to the numerous paraneoplastic syndromes associated with renal cell carcinoma, this tumor may also present as metastatic disease with an occult primary. For example, in one case reported by Eick et al (1985), RCC presented as an intrasellar mass on computerized tomography. This was later found to be RCC metastasizing to the pituitary gland. Another such case reported by Bedrosian et al (1984) revealed RCC presenting as a primary submandibular gland tumor. RCC has also been noted to occur with other diseases such as tuberous sclerosis (Shapiro et al, 1984).

Due to the myriad presentations of renal cell carcinoma, the physician must always be alerted to the possibility of this tumor. Be it erythrocytosis, anemia, hypercalcemia, hypertension, or even dysfibrinogenemia or amyloidosis, one should remember to consider renal cell carcinoma in the differential diagnosis when other more common diagnoses are not obvious. □

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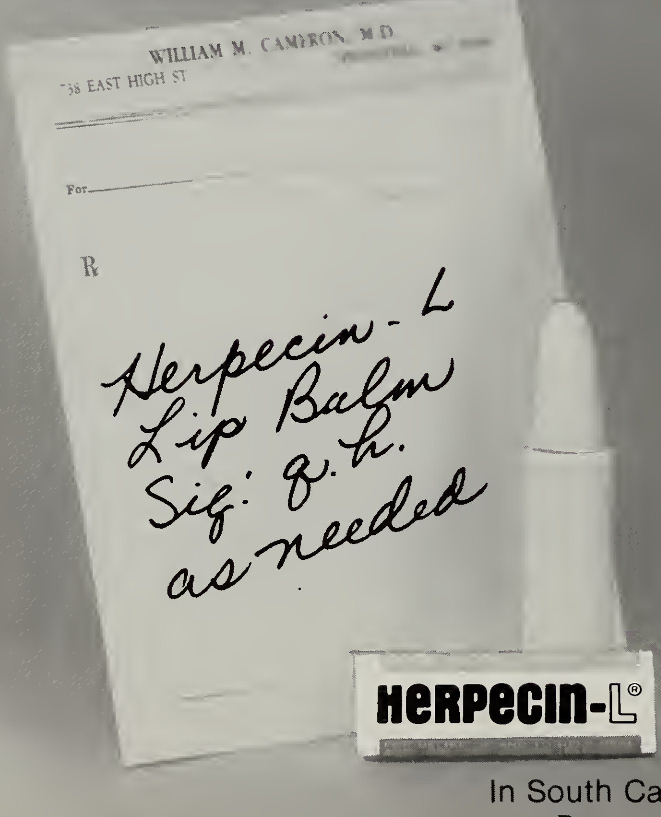

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CONSIDERATIONS ON SUN EXPOSURE*

RICHARD C. HAGERTY, M.D.
ROBERT F. HAGERTY, M.D.

People are spending more and more time in the sun, exposed to its rays. A tan body has the false connotation of a healthy body. While sensible and limited exposure to the sun can be salubrious, excessive exposure is damaging. The acute effects are sunburn and suntan. Chronic effects are premature aging, premalignant and malignant skin lesions,[2, 3, 4] eye damage and alteration in the immune response.[1]

It is our responsibility as physicians to warn and educate our patients about these problems and suggest ways that sun damage can be minimized. The ultraviolet spectrum of light from the sun is by far the most dangerous. These particular wavelengths can be grouped into two bands, UV-A from 320-400 angstroms, and UV-B from 290-320 angstroms. Both of these wavelengths are erythrogenic and melanogenic. However, the UV-B is by far the most damaging.

The greatest bombardment of ultraviolet light is from 10:00 a.m. to 3:00 p.m. People should avoid being exposed to direct sunlight during these hours. The wearing of protective garments can considerably reduce our exposure to ultraviolet radiation. The use of hats with broad rims, long-sleeved shirts, long pants and high collars should be encouraged. Ultraviolet light exposure is increased when one is on the water because of the scattering of the light from the water; thus, swimmers and boaters are at greater risk. Ultraviolet light can penetrate water; snorklers can be sunburned when swimming just beneath the surface of water. It should also be noted that ultraviolet light is reflected from sand — even from under an umbrella. The best precaution, however, is simply to avoid direct sunlight during its peak time.

Sunscreens are effective as protective agents;[5] however, choosing the appropriate one can be confusing. One must consider the patient's skin type and understand how these sunscreens work. The types of skin can be divided into three categories: (1) Fair-skinned people who always burn easily and can rarely tan; (2) Medium-skinned people who usually burn and occasionally tan; and (3) Dark-skinned people who rarely burn and almost always tan. The lighter one's skin, the more protective one should be. Choice of a sunscreen for a patient depends on that patient's history of sunburn and tanning.

In general, there are two types of topical sunscreens. The chemical screens are UV absorbing and usually colorless. The physical screens are most often opaque and reflect and scatter light. The physical screens are usually more difficult to use and less cosmetically acceptable.

Most sunscreens have a sun protection factor (SPF). This is a subjective number based on UV absorbing properties and measures the effectiveness of a product. SPF is a ratio of the least amount of UV-B energy required to produce a minimal erythema reaction to a sunscreen product film to the amount of energy required to produce the same erythema without any sunscreen application. It should be pointed out that SPF is usually a laboratory-derived value and does not take into account such factors as wind, humidity and sweating.

Many variables make up the SPF including subjective analysis. Therefore, SPF values can be manipulated and can contribute to false claims in advertising. There is no well-accepted procedure for testing SPF at this time. However, it is recommended that patients with fair skin use an SPF greater than 10. Patients with medium skin will need between 6 and 10 and dark-skinned people can use between 4 and 6.

Most sunscreens need to be reapplied every two hours. All sun protectors only lengthen the time required to acquire a sunburn.

The most common chemical protective agent is P-Aminobenzoate which is good for blocking UV-A. Titanium Dioxide and Zinc Oxide are good examples of physical agents that are excellent for blocking UV-B. Combinations of these are good and one looks for a combination of these ingredients in the more effective sunscreen products.

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We generally recommend sunscreens that contain both P-aminobenzoate and Titanium Dioxide or Zinc Oxide. The greater potential a person has to burn, the greater SPF factor should be used. We also counsel patients that there are certain drugs, such as sulfonamides, tetracyclines and thiazides, that increase the sensitivity of the skin when exposed to the sun.

Suntan parlors are becoming very popular and more sophisticated.[6] UV-B lamps and portable sunlamps are potentially dangerous and their use should be totally discouraged. Most UV-A lamps are considered to be safer and do meet standard requirements. However, UV-A penetrates deeper than UV-B, and may in time prove to be as damaging as UV-B. Many suntan parlors are now employing the use of these. However, as with sunlight, excessive exposure is detrimental and people with sensitive skin should be discouraged from visiting suntan parlors altogether. In addition, protective eyewear for operators and users should be mandatory.

We are seeing more and more skin cancers and problems related to excessive sun exposure. We are now taking more time in our practice to talk to patients about preventive care. We suggest common sense be used in sun exposure. Recreational suntanning should be avoided altogether. We are not suggesting people totally eliminate sun exposure, because moderate exposure can be healthy if one takes preventive measures. □

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ON DEATH AT BIRTH

RONALD V. WADE, M.D.*

Perinatal death has always provoked strong emotions. In recent years we have developed the technological capability to predict some perinatal deaths due to fetal anomalies and/or chromosomal abnormalities that are incompatible with life. Concomitant with the diagnostic ability should be the responsibility to organize a birth/dying plan for the family. The type of organization required, as well as the goals of management, is unfamiliar to many obstetricians. The assimilation of the necessary group of health care professionals presents unique problems in many instances. The following case report will exemplify the type of antepartum organization and counseling that is necessary in order to offer the family the type of obstetrical and neonatal care that will be a positive factor in a grieving process.

CASE HISTORY

J.H. is a 27-year-old primagravida who was referred for consultative sonography following an abnormal glucose tolerance test and the development of polyhydramnios at 28 weeks' gestation. Sonographic evaluation revealed a fetal omphalocele measuring 7.5 cm., left fetal equinovarus, and polyhydramnios. Genetic counseling was performed at that time; and, due to the association of fetal aneuploid states with omphalocele, an amniocentesis for fetal cytogenetic studies was performed. The fetus was noted to have a 47,XY 18+ (trisomy 18) karyotype. The parents and grandparents were again counseled from a fetal cytogenetic standpoint, as well as from an obstetrical standpoint.

Appointments were made with neonatology and pediatric surgery. During these sessions, plans for supportive infant care without aggressive resuscitation were made. Corrective fetal surgery would be performed only to assist with neonatal management and not as a potentially curative attempt. Multiple visits followed during which management plans were further refined to include appropriate use of the fetal monitor, the limited role of cesarean section delivery, and anesthesiology planning. The patient was admitted for induction of labor after cervical favorability had been achieved. The neonate was noted to have low-set ears and the above-noted anomalies.

A very slow fetal heart was noted at delivery, and little fetal movement existed. The infant occasionally gasped. After appropriate cleaning and wrapping, the infant was handed to the parents for support during the neonate's dying process in the delivery room. Extensive support from the neonatal team as well as the nursing staff enhanced this process immensely.

Following completion of the delivery process, the parents and their neonate were returned to their room where the parents and grandparents could hold the infant until the infant expired. No effort was made to prevent any of the family members from contacting this child.

DISCUSSION

The diagnostic ability to discern lethal fetal anomalies and/or cytogenetic status prior to delivery will continue to increase. The responsibility of organizing a perinatal management plan must be met. The psychological benefits of repetitive counseling sessions with professionals in multiple disciplines is immeasurable. Every effort should be made to plan for possible contingencies so that the birth/dying process will flow as smoothly as possible. A suggested outline for this type of organization should include the following:

1. Clear, concise, and complete description of fetal maldevelopment by the sonographer/sonologist during the primary scanning session.
2. Rapid and direct access to appropriate genetic counseling with health care professionals in this area.
3. Establishment of both a short-term and a long-term management plan including:

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A. *Short Term*
  1. Appropriate use of amniocentesis, ultrasonography, alpha feto-protein testing, and appropriate radiological studies.
  2. Antenatal consultation with neonatologists and appropriate surgical colleagues.
  3. Appropriate cytogenetic counseling and evaluation.

B. *Long Term*
  1. Continued consultation with appropriate surgical subspecialties and neonatology.
  2. Detailed evaluation of the plan regarding admission to the hospital, labor room management, use of anesthesia, and fetal monitoring.
  3. Planning sessions with labor and delivery nurses, postpartum nurses, and nursery personnel.
  4. Consultation with chaplain services and social services as needed.

Appropriate planning and organization with clear goals and objectives will assist in the effort to help these families through a most difficult process and will assist them in beginning to experience a healthy bereavement process. ☐

PHYSICIAN RECOGNITION AWARDS

The following SCMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned.

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Editorial

LET'S OUTLAW SLAVERY IN SOUTH CAROLINA

Do you know that in some parts of the world today fathers have the right to expose unwanted female infants or sell them into slavery? Do you know that slavery still exists in areas of the Near East, Asia, and Africa? Did you think that slavery was abolished in South Carolina when Abraham Lincoln's Emancipation Proclamation was enforced in a draconian manner by Sherman's troops? Even as late as thirty years ago when I came to South Carolina, women, legally, were still considered chattels of their husband, although they were given the sop of dower rights to keep a husband from disinheriting them completely. Children were considered chattels of their fathers. Superseding federal laws have largely replaced these antiquated legal codes. However, slavery of children is still possible in South Carolina and in other states!

A general presumption is that everybody loves children which, if you look at it closely, isn't strictly true. I am not just referring to people at restaurants who can't see why Mom and Dad at the next table can't keep little Billy from using the mustard squirt gun on you or little Mary from dropping her ice cream cone on your shoes. And after 17 years service on a County School Board, I realize that most parents are unwilling to spend the money necessary for an education that would maximize their children's potential in future life. Children, if I am hearing this late twentieth century society correctly, are chattels of their parents — pieces of property just like suitcases or automobiles. The right to have a baby is viewed today as conferring a corresponding right — the right not to have one, even if the baby is already growing inside the mother. A major industry exists just to terminate pregnancies.

In that way, if no other, the Baby M controversy is like a ray of sunshine. At least, here are people trying not to do away with babies, but to have them. Two couples in fact want one small child — not really a baby any more — the case has gone on far too long.

The facts are tragically and blatantly well known. William and Elizabeth Stern, unwilling to risk pregnancy, (Mrs. Stern has a mild form of multiple sclerosis), contract with Mary Beth Whitehead. Mr. Stern, as the old-fashioned saying goes, gets Mrs. Whitehead with child, although not in the old-fashioned way; but rather through medical technology (sperm implantation). The Sterns promise to pay Mrs. Whitehead $10,000 cash money. Mrs. Whitehead agrees, duly bears the child, loves her and wants to keep her. The family court judge in New Jersey, after a lengthy trial and international publicity, says, a deal's a deal, the baby belongs to the Sterns. Mrs. Whitehead says no, it doesn't either, see you in Appeals Court.

What do we learn in consequence? We learn very much what we learn from the proponents of abortion on demand — namely, that babies don't have rights in the meaningful sense. Grown people have rights — rights embodied in contracts, duly executed and registered at the courthouse. These rights may occasion legal disputes; but they come first, which is very much in the late twentieth century spirit — *I* want, *I* want; *me* first, you second.

In the Baby M case, we have a human child, one year old — a child without a name, meaning without a fundamental identity. She is either Melissa Whitehead or Sara Stern, according to the deliberations of wise men in black robes. We might all ask ourselves — how would we like to be born and grow up that way? It's bad enough from Baby M's standpoint to have been the deliberate product of a father and mother who are strangers to each other, seeking only to satisfy respective urges. How much worse it is to become Exhibit A in a legal controversy — two sets of parents pulling from opposite directions!

There is nothing we need so much as to back off and think what parenthood is all about. I can suggest what it used to be always about — responsibility to the creation and nurturing the new life. Two lives remaining whole yet shaping other lives, whole and indivisible; then these particles in turns dividing and dividing yet growing and growing, and so on — forever.

The whole rent-a-womb business is obscene. Why the law countenances it, I cannot say, except that it is all so new. Likewise, it fits so well into the modern ethics — babies as widgets — items to be produced, shipped, or interdicted in accordance with the "owners' " calculations and preferences. Yes, and to what end? We learn that not even the adults involved in the womb rental trade are uniformly happy. Mrs. Whitehead, it turns out, is miserable. Nine months, first of morning sickness, then swollen feet, weekly visits to the obstetrician, severe contraction pains, the shock and ecstasy at delivery. What do we expect when the Sheriff comes by to take away her baby? That she will dance all night for pure joy?

Why will all this be such a legal midden heap unless we do something about it? As one of my lawyer sons explained it to me, you have a constant debate between contract law and domestic relations law. Generally speaking under our law, which is derived from the old English common law, a legally binding contract between two parties cannot be superseded unless it involves action which is illegal (i.e. in South Carolina a gambling debt is legally unenforceable, although you may get your legs broken or a pair of cement overshoes if you don't pay up). Opposing this is domestic relation law or family law, which generally will give the mother possession of the child in any parental dispute unless she is proven incompetent for various reasons. There are a few other tricky little factors. One of these is what the lawyers call an unconscionable contract. Mr. and Mrs. Stern paid Mrs. Whitehead $10,000 to bear this child. Assuming an average gestational period of 280 days, this amounts to $35.71 a day. Does the law presume she is working 24 hours a day to produce this baby? If so, she is receiving only $1.49 an hour which is well below the minimal wage of $3.35 an hour. Even assuming she is not working on the baby when she's asleep and works only 16 hours a day, this only brings her wage up to $2.23 an hour. Only if you assume she is putting in only eight hours a day working on the baby, does this bring the wage up to $4.46 an hour and makes it legal; or does the law grant exceptions to the minimum wage law for surrogate mothers?

Other questions unanswered by this case are:

(1) What if the child is retarded or has congenital defects? Would either the Sterns or Mrs. Whitehead have been so anxious to keep the child under these circumstances? If neither, who gets the poor child?

(2) Does the child of a surrogate mother have an implied warranty for product quality? Would Mrs. Whitehead still collect the full $10,000 for producing a defective child?

(3) Does the surrogate mother get her full fee in case of abortion or miscarriage? (Will the old commercial slogan "Satisfaction guaranteed or your money back" apply?)

(4) Does the surrogate father have the right to require an amniocentesis and other tests early in pregnancy to determine congenital defects and the right to terminate the pregnancy if such defects are present?

For all of these reasons, surrogate motherhood ought to be illegal as are at least two other kinds of commerce in human flesh — chattel slavery and baby selling. The surrogacy business in fact gets more repulsive as time passes by. Not long ago, we learned that a Portuguese woman in South Africa is carrying her daughter's artificially fertilized triplets. We will be reading about this for the next few years in the splashy publications displayed at the grocery store checkout counters along with Liz Taylor's latest boyfriend and Princess Diana's latest cute caper.

A legal ban on womb rental would curtail rather than stop the practice, but this would at least be something. It is better for the trade to go underground where at least it seems disreputable rather than to be given the sanction of law with its legal documents enforceable in court. Our new President, Charlie Duncan, has created an Ethics Committee. Surrogate motherhood would seem to be one of the first items this committee should examine.

Sadly enough, nothing can be done for Baby M — whoever she is. The wheels of justice will turn, and she will end up in somebody's home, like a new table lamp. The longer our legislatures wait to do what needs to be done, the more human tragedies lie in wait for bodies all still unformed, for souls still in abeyance. The physicians of South Carolina should have the courage and leadership to abolish slavery in any form in this state for all time!

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Guest editorials reflect the opinions of the authors and do not necessarily reflect the official position of the Editorial Board or the South Carolina Medical Association.

IN MEMORIAM

Cortland D. Leigh, M.D., a retired surgeon from Great Falls, died on April 11, 1987. Dr. Leigh was a graduate of the University of Pittsburgh and its medical school. He was an active member of the SCMA.

J. Gordon Seastrunk, M.D., an Internal Medicine physician from Columbia, died on May 6, 1987. He was a graduate of Newberry College and the Medical University of South Carolina. Dr. Seastrunk was an Honorary member of the SCMA.

Newton G. Quantz, M.D., a retired family practice physician from Rock Hill, died on April 18, 1987. He was a graduate of Presbyterian College and the Medical University of South Carolina. Dr. Quantz was an Honorary member of the SCMA.

Those wishing to make Memorials in honor of their deceased colleagues may do so by sending contributions to the S. C. Institute of Medical Education and Research, P. O. Box 11188, Columbia, SC 29211.

ON THE COVER: CHARLES WILSON KOLLOCK, 1857-1931

Born in 1857, Charles Wilson Kollock, M.D., was designated by *The Charleston News and Courier* as "one of Charleston's most beloved citizens."

Dr. Kollock served as President of the South Carolina Medical Association in 1898 and followed in the footsteps of his father, Cornelius Kollock, M.D., who served the society as its President in 1887 and who has been reviewed in a previous cover story.

Dr. Kollock was born in Cheraw and attended the Virginia Institute of Technology at the age of 16. Dr. Kollock studied medicine in his father's office and was a graduate of the University of Pennsylvania in 1881. He did his internship in Philadelphia hospitals and his eye residency at the Wells Eye Hospital in Philadelphia. He further studied eye and ear diseases in clinics of London and Paris.

Dr. Kollock enjoyed a well-rounded life, both in medicine and in the community. He was a champion golfer, winning the club championship at the Charleston Country Club in 1907. He was a member of many genealogic and civic societies in Charleston, including the St. Cecelia Society, the Charleston Library Society and Alpha Tau Omega fraternity. He was a Lieutenant in the Charleston Light Dragoons and served as a Captain in that organization. He was the great nephew of South Carolina Governor John L. Wilson, who is noted for having authored the dueling code for the state of South Carolina.

Dr. Kollock was prominent in the medical community for many years and rendered invaluable service on the faculty of the medical college, as a member of the Municipal Board of Health and as a member of the City Council. His war service carried him to stations within the country where he served as a flight surgeon.

Dr. Kollock's final illness was that of a paralysis which led to his death in 1931.

— Thomas M. Leland, M.D., Ph.D.

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TRENDS IN MYOCARDIAL REVASCULARIZATION[*]

WILLIAM H. PRIOLEAU, JR., M.D.[**]
L. DIETER VOEGELE, M.D.
PETER HAIRSTON, M.D.

Coronary artery bypass became an accepted form of treatment for myocardial ischemia following reports by Favaloro[1] in 1968 and Johnson in 1969[2] of successful use of saphenous vein to achieve direct revascularization. First in academic centers and then in community hospitals, coronary bypass gained widespread acceptance. The first coronary bypass operation was performed in Roper Hospital in 1974 and within a year a significant number of patients with coronary disease were undergoing surgical management of their disease.

A candidate for coronary artery bypass in the early years of the operation was typically a middle-aged male who was considered strong enough to undergo cardiopulmonary bypass and was in good health but for his coronary disease. The decade following the first coronary bypass procedures at Roper Hospital has seen changes evolve in the candidates as well as certain aspects of the operation. The present communication compares statistics for coronary bypass operations performed in 1977 and 1986.

MATERIALS AND METHODS

Patients of the authors who underwent myocardial revascularization in 1977 were compared to those of 1986 with respect to age, sex, race, number of grafts per patient, type of conduit (use of internal mammary artery or vein alone), use of coronary endarterectomy, reoperation, need for intra-aortic balloon counterpulsation, carotid endarterectomy at the time of coronary bypass, survival, and length of stay in hospital for survivors.

Excluded from the study were operations for valve replacement, rupture of ventricular septum, and repair of congenital defects, regardless of whether or not an associated coronary bypass was performed.

There were 131 patients in 1977, and 129 patients in 1986, who underwent coronary bypass as their primary procedure.

RESULTS

Age: In 1977, the mean age was 53 years and in 1986 the mean age was 63 years ($p < 0.001$).

Sex: In 1977 there were 15 females (11%), and in 1986 there were 28 females (22%) ($p < 0.05$).

Race: There were two blacks in 1977 and seven blacks in 1986, not a significant difference but possibly a trend.

Number of Grafts Per Patient: The mean number of grafts per patient was 3.32 in 1977 and 3.22 in 1986, an insignificant difference.

Conduit: Only one patient had an internal mammary graft in 1977, and 38 patients had one or more internal mammary grafts in 1986 ($p < 0.001$).

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Coronary Endarterectomy: In 1977 there were 73 patients who underwent at least one coronary endarterectomy associated with grafting, and in 1986 there were only two patients who underwent coronary endarterectomy ($p < 0.001$).

Reoperation: In 1977 there was one reoperation, and in 1986 there were 11 reoperations for coronary disease ($p < 0.01$).

Intra-aortic Balloon Counterpulsation: There were 15 patients requiring intra-aortic balloon counterpulsation in 1977, and six in 1986 ($p < 0.05$).

Associated Carotid Endarterectomy: There were three carotid endarterectomies performed at the same time as coronary bypass in 1977 and none in 1986, an insignificant difference but possibly a trend.

Mortality: In 1977 there were no deaths and in 1986 there were four deaths (3.1%), an insignificant difference but suggesting a trend.

Length of Stay in Hospital For Survivors: In 1977 the mean length of stay in the hospital was 15.1 days, and in 1986 it was 20.6 days ($p < 0.05$). When the outliers (3 patients staying over 100 days) were eliminated, the stay was 15.1 days in 1977 and 16.9 days in 1986, an insignificant difference.

DISCUSSION

Over the years from 1977 to 1986 there were significant changes in the patients referred for myocardial revascularization, findings similar to those of other centers around the country.[3]

Many factors are probably related to the increase in age by 10 years between the years 1977 and 1986. The public is better educated as to health matters and pays closer attention to the problems of hypertension, obesity and smoking cigarettes, thereby delaying the onset of life-threatening coronary disease in many instances. During the period from 1977 to 1986, medical practice saw an increase in the use of beta blockers as well as the introduction of calcium channel blockers and angioplasty, three advances which served to delay or avoid coronary bypass. Advanced age and complicating medical problems, deterrents to cardiac surgery ten years before, did not stop operation as frequently in 1986. Also, patients who had had coronary bypass some years in the past returned in 1986 for reoperation. For whatever the reason, the older patients of 1986 presented more complex clinical situations and were at greater risk for operation.[4]

The operative procedure remained constant over the decade with regard to the number of grafts per patient but changed in many other respects. The incidence of using the more durable internal mammary artery increased significantly but remained less than that reported from some of the larger clinics.[5] In 1986 many of the patients at Roper Hospital possessed one or more of the relative contraindications to the use of the internal mammary artery: age over 70 years or expectation of less than 10 years to live, cardiovascular instability (emergent operation), significant left main coronary artery occlusion, ventricular hypertrophy, severe emphysema, and cineangiogram suggesting the absence of a vessel suitable for grafting with an internal mammary artery. It seems likely that many of the patients travelling a long distance to a clinic are more stable than many of those seen in a community hospital, and consequently the internal mammary is used more frequently.

Coronary endarterctomy was less often performed in 1986 than in 1977. Coronary endarterectomy remains to some extent a matter of personal preference, but there is a trend in many institutions to graft smaller vessels beyond a plaque in preference to performing an endarterectomy which permits grafting a vessel which is larger in diameter, but may have a risk of thrombosis.

Intra-aortic balloon counterpulsation was less frequently used in 1986 than in 1977. To a large measure this reflects improvements in myocardial preservation utilized during the operations in 1986, making it less often necessary to have the assistance of a balloon at the termination of cardiopulmonary bypass. The techniques of myocardial preservation used routinely in 1986 included intra-coronary infusion of cold blood cardioplegia, the pouring of cold slush over the myocardium, and monitoring of temperature by a thermister probe placed in the myocardium.

The absence of carotid endarterectomy in conjunction with coronary bypass in 1986 reflects the current reappraisal of critical carotid stenosis. A moderate carotid stenosis was not considered as threatening in 1986 as it was in 1977. There was also a tendency to perform carotid endarterectomy at a different time in those cases where it was considered necessary in an effort to reduce possible complications.[6]

Hospital stay was longer in 1986 than in 1977. The longest stays involved high risk individuals who might not have been considered acceptable for operation in 1977. The trend towards increased mortality also reflects the number of high risk patients who underwent operation in 1986. Advanced age, obesity, female gender, reoperation, and emergency operation have been shown to increase the risks of coronary bypass. One or more of these factors was present in each of the three patients who stayed in the hospital over 100 days and in each of the four deaths.

In addition to increased surgical experience over the decade from 1977 to 1986, there were noteworthy developments in the postoperative management of patients with difficult problems. Improved hyperalimentation frequently provided the nutritional support necessary for recovery in 1986. Improved respiratory support under the guidance of pulmonary specialists was essential to the successful outcome of many cases. The increased coverage provided by recently introduced antibiotics allowed better control of sepsis.

The statistics from this study show that coronary disease in the elderly and debilitated can be managed surgically with an acceptable mortality. Efforts must continue, however, to define precisely the risks of operation and seek further improvements in the management of coronary disease.

SUMMARY

One hundred thirty-one cases of myocardial revascularization performed in 1977 were compared with 129 cases in 1986. Over the decade the average age of patients increased from 53 years to 63 years, and the percentage of females increased from 11 percent to 22 percent. An internal mammary artery was used as a conduit in one case in 1977 and in 30 percent of cases in 1986. There were no deaths in 1977 and four deaths in 1986 (3.1%). Mean hospital stay increased from 15.1 days in 1977 to 20.6 days in 1986. While risk factors of patients in 1986 increased there were also significant developments in patient management to cope with the elderly and debilitated with coronary disease. ☐

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NONSURGICAL TREATMENT OF HEMORRHOIDS

JACKIE E. JACOB, M.D.

There has been much interest recently about the treatment of hemorrhoids by nonsurgical means. Some, using the injection technique, promise an easy procedure with little or no morbidity, while others feel that bands can be applied to all but the worst cases. Since my training and early career were English, I used the St. Mark's policy[1] of injecting hemorrhoids with five percent phenol in almond oil for 30 years. I have found it good for stopping bleeding but difficult to do when the lining of the rectum is not loose and easy entry into the submucosa is not readily possible. I have had little or no morbidity and many happy patients. In 1975, I was assigned to Moncrief Army Hospital where the proctology clinic was set up to band hemorrhoids. Since then, I have been treating most of my prolapsing hemorrhoid cases with bands. An attempt is made to offer these nonsurgical methods with a background of anatomy.

Hemorrhoids are discrete vascular cushions lining the anal canal. They are the distended veins of arteriovenous connections and their coverings in the submucosa.

ANATOMY[1, 2]

Hemorrhoids are Internal and External.

Internal: The inferior mesenteric artery terminates as the superior rectal (hemorrhoidal). This artery goes down the back of the rectum and divides into right and left. The right branch further divides into two. The left remains single. These branches pierce the muscular coats to enter the submucosa about 10 cm. above the anal canal and proceed to the internal hemorrhoidal plexus.

The venous drainage of the plexus is by single veins which leave the submucosa and penetrate the rectal walls to join the mesorectum 10 cm. above the anal verge. These veins have no valves and drain into the portal system. Since the right branch of the superior rectal artery divides into two, we have two hemorrhoids on the right and one on the left. These are primary hemorrhoids or piles. The left pile and the posterior right pile sometimes have one to three smaller secondary piles near them, formed from further branches of their divisions.

External: External hemorrhoids are parts of the external hemorrhoidal plexus. They are supplied by the inferior hemorrhoidal artery, a branch of the internal pudendal, and are located at and outside the anal margins. Their venous drainage is into the somatic system through the internal iliac veins. They are covered by transitional epithelium and skin and are very sensitive.

PATHOLOGY

There are two principle factors responsible for the formation and progression of hemorrhoids.

1. *Venous Factors:* As with varicose veins, the hemorrhoidal plexus is distended by the erect posture of man, a valveless venous drainage and the presence of thin-walled, easily distensible veins. Any interference with easy drainage into the portal system will contribute to the distention of these veins. Thus, sitting for many hours as in a car, pregnancy, increase in rectal intraluminal pressure, obesity, etc., may precipitate an attack of hemorrhoids.

2. *Mechanics of Bowel Movement:* Peristalsis causing high intraluminal pressure by muscular contraction obstructs the venous return from the internal hemorrhoid plexus. The downward motion of the stool further milks the venous return towards the anus, and the plexus distends. During the expulsion of stool, the anal sphincter, supporting the distended plexus, opens and the plexus protrudes into the lumen. The passing stool, if hard, tears the lining and bleeding occurs. Frequent stools and toilet paper use may also erode the epithelium to cause bleeding. At first the pile only bulges a little (first degree pile). However, with the continued thrust downward, this bulge gradually increases in size and comes out of the anal canal during straining or defecation, but goes back in when this action is stopped, (second degree pile). When the pile has stretched its fibro-

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muscular supports to such an extent that it cannot go back by itself and has to be replaced manually, we have the third degree pile. These stretch the sphincter, and feces may leak out. A mucoid discharge from the piles may cause irritation and excoriation of the skin. Sometimes the second degree pile is caught by a tight sphincter grip and cannot regress. It becomes engorged, edematous, thrombosed, ulcerated and sometimes gangrenous. This is a very painful condition, the acute pile or strangulated pile.

Thrombosed hemorrhoids are clots inside the external hemorrhoid plexus which distend and are very painful. Ulceration or erosion of the covering may cause bleeding.

TREATMENT

Exclude other causes of bleeding. A rectal carcinoma may bleed in a patient who also has hemorrhoids. History is important. Staining the toilet paper only or streaking the stool suggests causes in the anus. Free, bright red blood in the toilet bowl may come from lesions in the colon, rectum, or anal canal. Bright red bleeding proximal to the colon means large amounts of blood going rapidly through. Indeed, a duodenal ulcer or Meckel's diverticulum can cause bright red blood to pour into the toilet bowl, and the patient may go into shock. Age is also important. Patients over 35 to 40 should have a barium enema examination and a colonoscopy (at least 60 cm). Younger age groups with a history of staining the toilet paper only should have at least a sigmoidoscopy and if hemorrhoids are seen, particularly bleeding ones, the treatment of hemorrhoids may commence. If bleeding continues after treatment, further investigation is in order.

The following policy is adopted for a patient with a history of rectal bleeding:

Rectal Exam
Sigmoidoscopy (Proctoscopy)

In toilet bowl
BE followed by colonoscopy.
Staining stools or toilet paper only

Over 40
BE and 60 cm. colonoscopy. If negative treat hemorrhoids.

Under 40
Treat hemorrhoids. If still bleeds, do BE and colonscopy.

Plan of Treatment of Hemorrhoids
Rationale — Stop bleeding — Remove excess membrane surface.

1st Degree	Early	Noninvasive treatment
	Late	Injection
2nd Degree	Early	Injection
	Late	Banding
3rd Degree	Early	Banding
	Late	Banding or Surgery
4th Degree		Hemorrhoidectomy
Acute or Strangulated Piles		Hemorrhoidectomy under local anesthesia, with antibiotic coverage.
Thrombosed Hemorrhoids	Recent, Tense, Painful.	Excise ⅓ of pile. Remove clots.
	Late, Subsiding	Sitz baths

Noninvasive Treatment

By this treatment we try to reverse the mechanics that produced the hemorrhoids. *Sitz baths,* followed by bed rest with the foot end of the bed elevated and patient lying prone, will help drain the congested piles by gravity. *High fiber diet*[3] will help reduce high intrarectal and anal pressure and aided by sphincter relaxation from the sitz bath will prevent obstruction to venous return. *Constipation must be avoided*, and if stools are hard, the patient should be encouraged to drink plenty of water, and stool softeners such as Colace may be prescribed. If the anal sphincter is tight, the patient may be advised to stretch it very gently with the fingers at the end of the sitz bath.

Injection Treatment (Fig. 1)

The injection of hemorrhoids with phenol was first practiced in 1871 by Mitchell of Clinton, Illinois, who used olive oil to make the solution. Edwards in 1888 used glycerine and water. The solution at that time was injected into the pile. It was not until the early part of this century that Albright's method of submucosal injection above the hemorrhoid became known. The solution he used was five percent phenol in almond oil.

The method of injection treatment is as follows: The five percent phenol in almond oil is prepared in our pharmacy in two ounce bottles and gas sterilized. The solution (6cc) is drawn into a syringe, and a #20, 3½ inch spinal needle is used for the injection. An anoscope is inserted up to its hilt and slowly withdrawn until the red blush of the hemorrhoid appears. Getting the patient to strain

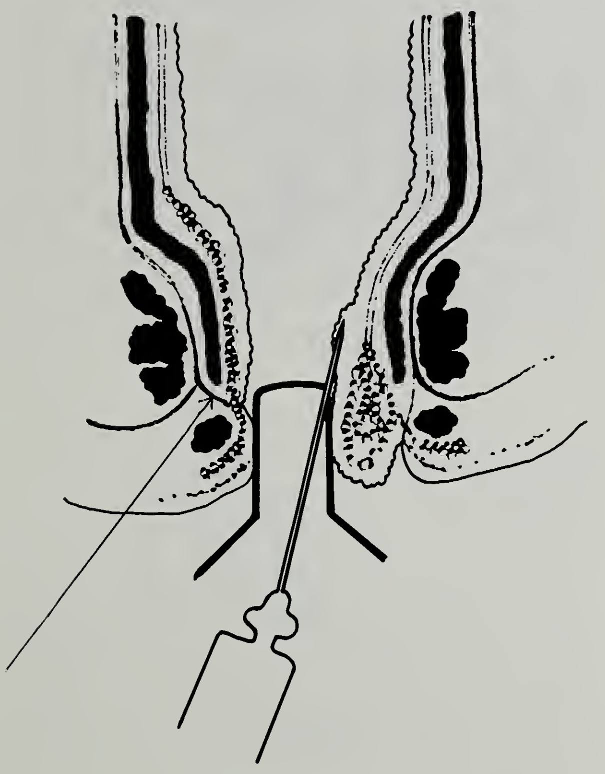

FIGURE 1

and pushing the anoscope slightly inward again will expose and bulge the hemorrhoid, which can then be assessed as to its size, degree, and whether or not it is bleeding. The biggest one is selected, and the needle with its bevel turned towards the rectal wall is inserted above the pile into the submucosa with a sharp stabbing movement on contact. This is necessary or the mucous membrane will be pushed up by the needle and the oily solution will leak out. Once the needle is in the submucosa, the solution is injected using not more than two cc into each pedicle. If difficulty in injection is noticed and a white blistering of the mucous membrane appears, the needle must be withdrawn because it is not in the submucosa but in the mucous membrane. If correctly injected, the solution goes in easily, the mucosa bulges and is pale with occasional visible capillaries over it.[1] The patient is advised to take it easy for the day and refrain from strenuous activity. He is to return in two weeks when he is anoscoped again and a second course of injection is given if needed. Usually two courses of injection are given. If a pile is seen actively bleeding in the first course, a one cc injection is given into the pile for one time only. This will stop the bleeding. Subsequent injections will be above the site.

Some problems with injection treatment are *pain* if the pile is injected too low; *infection* and *abscess formation* occur when the injection is given deep into the rectal wall; *sloughing* of the mucous membrane occurs if too much solution is given or if it is injected into the mucous membrane instead of the submucosa. Pain and sloughing can be easily avoided or treated and will soon disappear. Abcesses are rare and can be avoided by proper technique.

Banding[4, 5]

When tissue needs to be removed, as in prolapsing hemorrhoids, this method is good. Pinching the mucous membrance will also pull in parts of the venous return and cause a disconnection, resulting in decongestion of the hemorrhoid. The loss of tissue will heal by cicatrix and pull up the prolapsing hemmorhoid.

The method used in banding is shown in Figures 2 and 3. The anoscope is inserted as in the injection treatment. When the pile is exposed and made prominent, a point is selected about two to three mm above the pile. The forceps is inserted through the ligator loop to grasp the mucous membrane at that point and pull it into the loop. This is then fired to release two rubber bands around the base of the pinched mucous membrane which then becomes bluish. A cryotherapy probe is applied at 20 degrees centigrade for 15 to 20 seconds on the protruding tissue.[°] If the pile is large, further applications at one or two other points are made. One pile at a time is banded at intervals of two weeks. The tissue banded must be well above the mucocutaneous junction, otherwise pain may occur immediately if the line is included, or a few hours later if edema reaches the line from a banding too near. Treatment of this is bed rest and sitz baths, and in extreme cases, removal of the band. Banding may be done even if injections have been used previously. More than one hemorrhoid may be banded, but this is not advised as defecation may be difficult.

Surgery

If there is too much prolapsing tissue, hemorrhoidectomy is the procedure of choice. In cases of prolapsing, strangulated, or acute hemorrhoids,

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[°] Not necessary as long as the tissue grasped is well above Hilton's line.

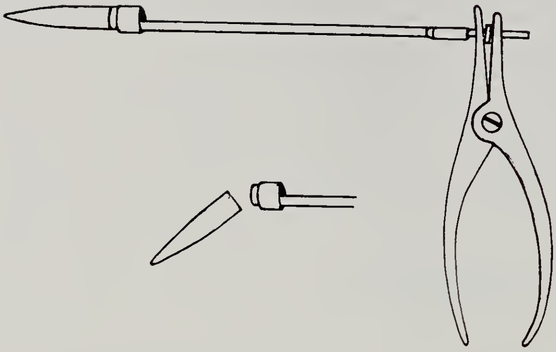

FIGURE 2

surgery is done as an emergency under local anesthesia with antibiotic coverage.

RESULTS

A retrospective study of hemorrhoids was very difficult since most patients were outpatients, making it almost impossible to collect data on active duty patients because their outpatient records are sent with them to new duty stations. A prospective study at this time would take too long to be meaningful, so the data were collected by reviewing 2,026 consecutive outpatient charts filed in numerical order based on social security numbers. These were mainly retired patients and dependents within the 40 to 60 age bracket, but there were patients as young as 16 and as old as 79. Thirty cases of hemorrhoids were found for a 1.5 percent yield.

Since all proctoscopies were logged in the surgical clinic, a better yield was found there. Of these 229 cases, there were 52 cases of hemorrhoids not previously accounted for a yield of 22.5 percent.

A total of 82 hemorrhoid cases was reviewed. The primary treatment was 45 noninvasive, 28 banding, one injection, six hemorrhoidectomy, and two cases were incised and drained for thrombosis. The large number in the noninvasive group reflected by colleagues' preference for that mode of treatment. The injection method of treatment had only one case because the time span involved was mainly 1982-83 when the author was particularly evaluating the banding method and the use of the cyroprobe with it. In all fairness, from 1947 to 1975 the author had used the noninvasive and injection treatment only, with good results, but after 1975 banding was used increasingly. Unfortunately, the earlier charts cannot be retrieved, but there were no serious problems with injections. A few cases of sloughing of the mucous membrane were easily treated conservatively. When recurrence did happen, it was usually after one year.

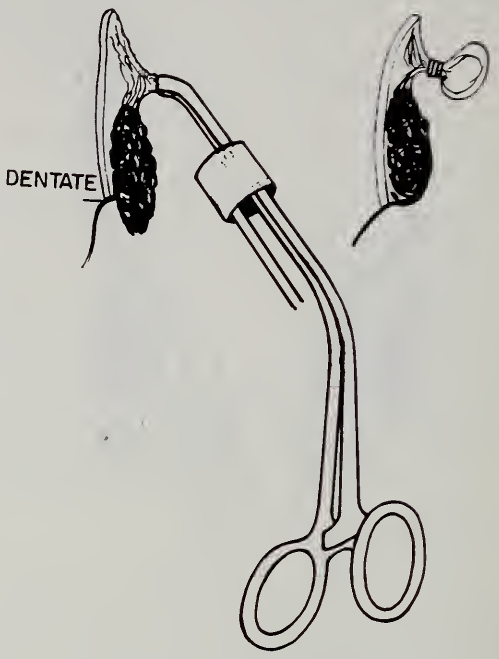

FIGURE 3

Noninvasive Treatment

Forty-five cases were reviewed with this form of treatment as the sole or primary care.

Twenty-seven cases had good results (60%) and 20 of these were first degree.

Eighteen cases had poorer results, with one or more recurrences. Seventeen of these were first and second degree. Of the 18 patients, eight had subsequent banding, two had hemorrhoidectomies, and seven received further noninvasive treatment. Of the seven, three bled after five years.

Banding

Twenty-eight patients were banded; most were over 50, and females had a slight edge over males. Twenty-four patients were second degree and four were second and third degree. Prior to banding, eight were treated first by noninvasive means, one by cryosurgery, and four had hemorrhoidectomies previously.

Results of Banding

Twenty-three patients, i.e. 82 percent had fair to good results; eighteen of these were excellent and five were fair with mild recurrences. Of the remaining five, one was rebanded, one was injected twice and one was considered to need a hemorrhoidectomy as preferred treatment one month after banding. Two continued to have problems and also had surgery one and eight years later.

ABSTRACT

Nonsurgical methods of treating hemorrhoids are discussed with the anatomy and mechanics of hemorrhoids. The methods are directed toward arresting bleeding and removing excess mucous membrane surface if necessary. Bleeding may be stopped by injection with phenol. If tissue must be removed, banding is better. If the piles are strangulated and edematous, surgery is the answer. If banding fails, or the amount of tissue to be removed is excessive, surgery is preferable. Other forms of nonsurgical treatment, such as cryosurgery, anal dilatation, and sphincterotomy have little merit and excessive morbidity.[6] They are not discussed. □

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ADDENDUM

Since this artlcle was written, the author has treated two hemorrhoid patients by injection and four by banding. One of the four banded had severe fourth degree hemorrhoids but refused surgery. When the bands fell off two weeks later, he bled significantly. The bleeding was stopped by everting the mucocutaneous junction under local anesthesia and applying a suture. All patients did well and none had cryotherapy after banding.

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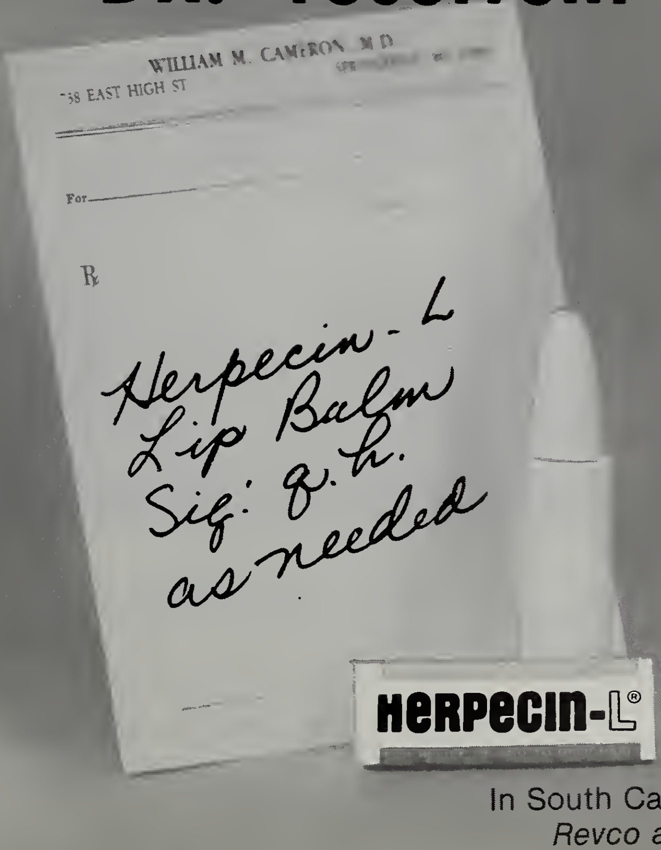

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GYNECOMASTIA IN THE MALE: CORRECTION BY LIPOSUCTION

CARTER P. MAGUIRE, M.D.*

Presence of enlarged mammary glands in the male is an abnormal and embarrassing condition. The glandular enlargement is usually accompanied by adjacent fatty deposits. While microscopic examination of the glandular tissue usually reveals no cellular atypia, the ductal epithelium is thickened and lobular definition is lost. Clinically, the glandular tissue presents as a firm, nodular tumor-mass which, frequently, is tender to palpation.

Treatment of the condition is surgical removal of the mammary gland. Prior to the advent of suction assisted lipectomy, this usually resulted in a depression deformity under the nipple-areolar and across the front of the chest (Fig. 1).

Suction assisted lipectomy through a 4 mm incision at the inferior edge of the areolar makes it possible to remove the fatty deposits around the glandular tissue. A feathering technique minimizes the depression on the chest wall. The residual breast tissue is removed by inversion through the incision and excising from the under surface of the nipple-areolar.

CASE REPORT

Forty-year-old white male with abnormal enlargement of the mammary glands was seen concerning surgical correction on November 10, 1986. Examination revealed firm, nodular enlargement of both mammary glands measuring 5 cm. The masses (Fig. 2) were adherent to the nipple areolar but freely movable over the pectoral fascia. The masses were tender to palpation. There were the usual associated fatty deposits around the mammary glands. Additionally, the patient had an abnormal localized collection of fat around the anterior abdominal wall.

Surgery for the correction of the gynecomastia and suction assisted lipectomy of the anterior lateral abdominal wall was performed at Roper Hospital Ambulatory Unit under general anesthesia. At the time of surgery, 1600 cc of fat and mammary gland tissue was removed by way of small incisions at the bottom of each areolar and on either side of the pubic hair. A support garment was applied. The sutures were removed after a week. Postoperatively, he did well. By measuring with a tape he lost five inches around the chest at the level of the nipple areolar and five and a half inches around the waistline (Fig. 3). ☐

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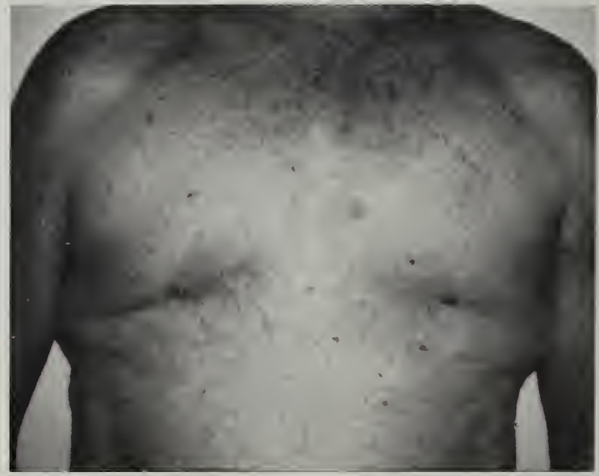

FIGURE 1. Deformity of anterior chest wall caused by correction of gynecomastia prior to suction assisted lipectomy technique.

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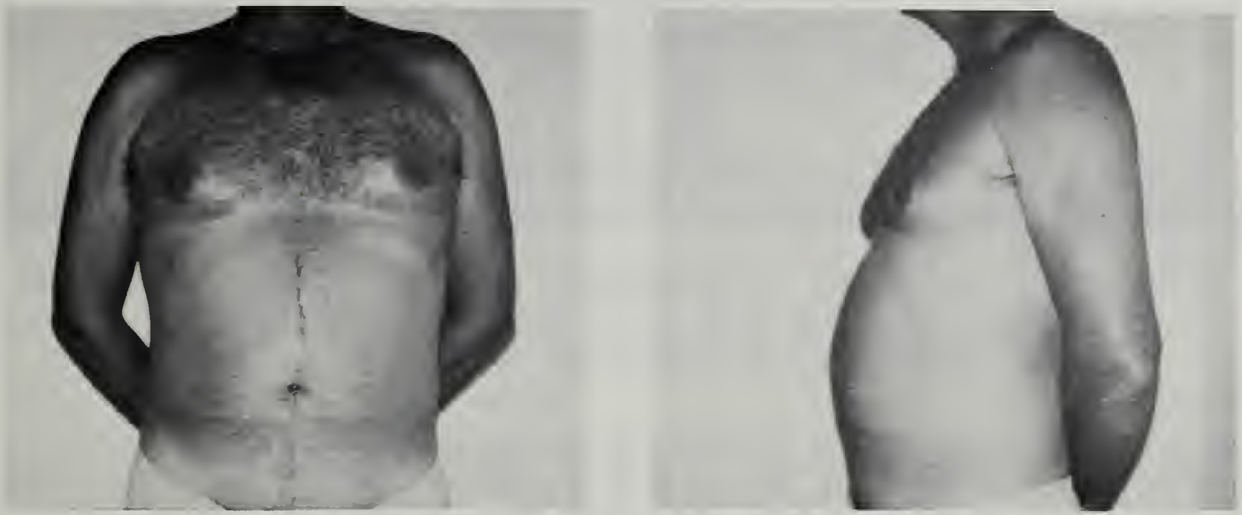

FIGURE 2. Preoperative — Note large breasts (almost A cup) and protuberant abdominal wall.

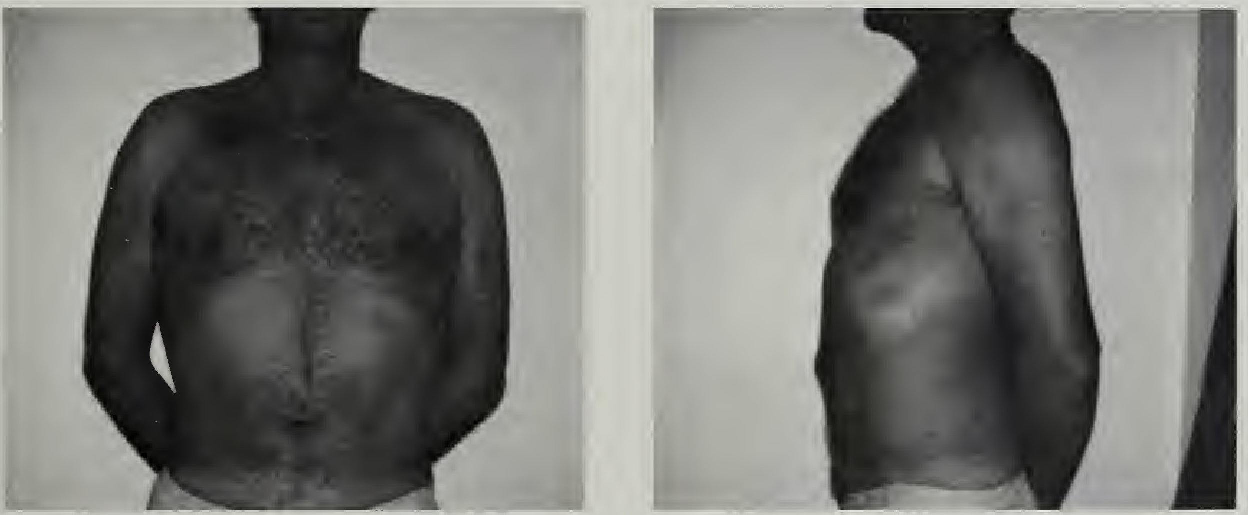

FIGURE 3. Postoperative — 1600 cc fat was removed from abdominal wall and breasts in addition to mammary gland tissue. Five inches reduction around chest and five and a half inches reduction around waistline.

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AN EARLY REFUTATION OF A STATES' RIGHTS MEDICINE DOCTRINE

WARREN A SAWYER*

Anonymous articles and reviews were common to the medical literature of mid-nineteenth century. One might claim that such anonymity removed personalities from the issue at hand, and let arguments stand on merit alone. Nonetheless, historians must often assume the pose of sleuth in determining the identity of the author of a particular document. This paper presents evidence resulting from an attempt to identify the author of an anonymous review significant in its refutation of an antebellum doctrine know as "states' rights medicine." This doctrine provided a curious mixture of science, racism, and politics in support of slavery. Was the writer of this anonymous review refuting several major tenets of states' rights medicine a northerner and abolitionist, or a southerner disloyal to the confederacy? The evidence presented herein addresses these questions.

The *Charleston Medical Journal and Review (CMJ&R)* was one of 21 American medical journals published in 1848 when Oliver Wendell Holmes reported on the medical literature to the American Medical Association.[1] Holmes' report commented favorably on a number of articles published in the *CMJ&R*. John Bellinger's account of four operations for the removal of abdominal tumors was cited as "interesting," and Dr. Wragg's essay on the use of animal ligatures was noted for having ". . . been extensively copied by other journals."

Holmes called particular attention to a thesis published in the *CMJ&R:* F. Peyre Porcher's "A Medico-botanical Catalogue of the Plants and Ferns of St. John's Berkley South Carolina." Holmes found Porcher's Medical College of the State of South Carolina M.D. thesis to be one of those which would ". . . do credit to the institutions from which they proceed, and to the country," and become ". . . an actual accession to the treasures of science." The *CMJ&R*, then in its third year (the first two years it was published under the title *Southern Journal of Medicine and Pharmacy)*, held its own with many of the more established journals scrutinized by Holmes.

F. Peyre Porcher was later to become Co-Editor of the *CMJ&R* with D. J. Cain. Their paths were to cross that of a third native-born South Carolinian, Daniel Warren Brickell, in one of those controversies found in American medical literature which according to Holmes may have been ". . . unavoidable but . . . are to a medical journal what a chancery suit is to an estate."[1]

The controversy began with the publication of Samuel A. Cartwright's "Report on the Diseases and Physical Peculiarities of the Negro Race" in the *New Orleans Medical and Surgical Journal* in 1851.[2] This report, popularly known as the "Cartwright Report," was the result of a charge by the Louisiana Medical Convention to a committee on diseases peculiar to the Negro of which Cartwright was the Chairman.[3] Cartwright, a leader in the cause of states' rights medicine, announced in his report a number of hitherto unknown differences between blacks and whites including: the Negro's brain and lungs were smaller than those of a caucasian; the Negro had an antipathy for fresh air; the Negro had a love of slavery; the Negro perceived music as a mere sensual pleasure; Negro consumption was caused by bad government on the part of the master and superstition on the part of the Negro. The Negro also suffered from two new diseases discovered by Cartwright: *Dysesthesia Aethiopis*, causing them to misbehave; and "drapetomania," causing them to run away.[4]

Southern attorneys developed constitutional arguments in defense of slavery; southern clergymen found theological grounds to justify slavery; therefore, it was not inconsistent that southern physicians should seek anatomical and physiological grounds in support of that "peculiar institution." As in most extremist positions, there was some truth to be found. In addition to his

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* Professor and Director of Libraries and Learning Resource Centers, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425

screed's racist polemics, Cartwright's report contained sound arguments for basing the study of medicine for southern practitioners in the South.[5]

The "Cartwright Report" was reviewed in a number of journals. One review was rejected by the *New Orleans Medical and Surgical Journal* as containing "personal abuse" and "discourteous allusions."[6] This review, however, was accepted by Cain and Porcher for the *CMJ&R*, and was published anonymously. Historians have accepted the anonymity of the reviewer with one exception: Kenneth F. Kiple and Virginia H. King attribute the authorship of the review to Cain and Porcher.[7] The present writer does not concur with this attribution. A number of clues pointing to Daniel Warren Brickell as the review's author are found in the text of the review.[8] The reviewer speaks of his "youth"; Brickell was born on October 9, 1824 and was 27 at the time the review was written. The reviewer was "born and bred" in the South; Brickell was born in Columbia, South Carolina, the second son of William A. and Susan M. Brickell and was raised in South Carolina, Tennessee and Mississippi.[9] The reviewer reminisces about his ". . . wanderings as a student through the courts and alleys of Philadelphia," and mentions receiving his ". . . medical education in the North." Brickell received his medical degree from the University of Pennsylvania in 1847. The reviewer speaks of treating slaves in Adams County, Mississippi; Brickell's presence at Rifle Point Plantation in Adams County on June 25, 1849 is confirmed by Dr. C. S. Magoun in Magoun's published account of a local cholera epidemic.[10] The reviewer disparages Cartwright's discussion of typhoid pneumonia; Brickell had a great interest in this disease and later published a paper entitled "Epidemic Typhoid Pneumonia Amongst Negroes."[11]

Kiple and King's attribution of the review may be discounted in that the only one of the above characteristics shared with the reviewer by Cain and Porcher is that of being born and bred in the South.

Daniel Warren Brickell was loyal to his native region. Upon the fall of New Orleans in 1862, he entered the service of the Confederacy applying his skills in both field and hospital until the close of the war. Brickell, however, did not confuse his politics and his science.

Brickell, as reviewer, agreed with Cartwright that southern medical schools should provide for the study of diseases to which blacks were susceptible, but rejected Cartwright's descriptions of anatomical differences purportedly found in blacks as ". . . the fruit of [an] imaginative brain . . . rather than the actual demonstration of the scalpel." Brickell denied vehemently Cartwright's assertions that Negroes preferred slavery if left alone and that Negroes needed such a form of governance, stating that "naught but self-interest ever promoted their importation to our shores, and no contortion of facts can ever make it appear otherwise."[8]

Cain and Porcher commented that while they did not ". . . concur in all the views entertained by the reviewer . . ." they considered it ". . . as far as it goes, a complete refutation of Dr. Cartwright's most extraordinary and hypothetical assertions."[6]

Following an 1852 article by Brickell in the *CMJ&R*, challenging a Cartwright gynecological procedure published in the *New Orleans and Surgical Journal*, Cartwright questioned Brickell's existence and accused Cain and Porcher of ". . . publishing attacks on me [by this] same anonymous author in several numbers of the Charleston Medical Journal."[12] Cain and Porcher responded in an editorial that while they were not personally acquainted with Dr. Brickell, he was not fictitious; was a physician and a native of South Carolina; had written them several letters during 1851; subscribed to the *CMJ&R* which was sent to him at the Natchez Post Office and that he resided a short distance from Natchez.[13]

The evidence presented herein, while circumstantial, supports the contention that Daniel Warren Brickell was the author of the *CMJ&R's* review of the "Cartwright Report." A native of South Carolina called upon two fellow South Carolinians for aid in the publication of a review of a report that was politically not scientifically conceived, and was given voice. The author was not a northerner or an abolitionist nor was he disloyal to the Confederacy. Rather, he was a physician whose science was not altered by his loyalty to and love of the South. ☐

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Editorial

FLASH!

> *We have a major . . . epidemic on our hands, the likes of which has not been seen during this century. We must now motivate our politicians to take a more active role in dealing with this epidemic.*[1]

The news struck like a bolt of lightning. On May 22, 1987 — just four weeks after the Symposium on AIDS and human immunodeficiency virus (HIV) infection at this year's SCMA annual meeting — the Centers for Disease Control reported three HIV seroconversions in health care workers who did not have a history of known parenteral or percutaneous exposure to blood.[2] These reports have already precipitated a new wave of . . . [*choose one:* (a) grave concern; (b) fear; (c) panic].

Any cutaneous or mucosal exposure to blood, body fluids, or tissues carries the potential to transmit this virus. This risk applies not just to exposure to AIDS victims — it applies to exposure to *anybody* (even the person shown to be HIV antibody-negative could be in the pre-seroconversion stages of infection). The risk is *small* — in most cases almost infinitessimally small — *but it is nevertheless real.* We have yet to absorb all of the far-reaching implications.

As of this writing, there are seven published reports of HIV seroconversion in health care workers. More are certain to follow. It seems appropriate to review the circumstances of each of these occurrences. The exposure events were as follows:

Case 1.[3] A British nurse caring for a woman who had lived in central Africa, and who had none of the usual risk factors for AIDS, suffered a needlestick injury to the finger "while re-sheathing a hypodermic needle on a syringe containing fresh blood from an arterial line," which was "not an ordinary needlestick injury, in that a small amount of blood may well have been injected."

Case 2.[4] A New York State female health care worker, during an emergency procedure, "received a deep intramuscular needlestick injury, with a large-bore (1.67 mm in diameter) needle and syringe unit that was visibly contaminated with blood from a patient with the acquired immune deficiency syndrome (AIDS)."

Case 3.[5] During a thoracentesis, a French nurse "received a superficial self-inflicted needlestick injury to the finger while recapping the needle, which was contaminated by the bloody pleural fluid of a patient with persistent generalized lymphadenopathy, pleural effusion, seropositivity for HIV, and hepatitis B surface antigen."

Case 4.[6] A 24-year-old French student nurse "pricked the fleshy part of her index finger with a needle used to take blood from an AIDS patient. No injection of blood was noted. . . ."

Case 5.[2] A female health care worker "assisting with an unsuccessful attempt to insert an arterial catheter in a patient suffering a cardiac arrest in an emergency room applied pressure to the insertion site to stop the bleeding. During the procedure, she may have had a small amount of blood on her index finger for about 20 minutes before washing her hands."

Case 6.[2] "A female phlebotomist was filling a 10 ml vacuum blood collection tube with blood from an outpatient with suspected HIV infection when the top of the tube flew off and blood splattered around the room, on her face, and in her mouth. She was wearing gloves to protect her hands and was wearing eyeglasses. . . . She had facial acne but no other wounds. She washed the blood off immediately after the exposure. . . ."

Case 7.[2] "A female medical technologist was manipulating an apheresis machine (a device to separate blood components) to correct a problem that developed during an outpatient procedure when blood spilled, covering most of her hands and forearms. She was not wearing gloves." Although there were no open wounds, "she had dermatitis on one ear and may have touched it."

In each of these seven cases, antibodies against HIV were not present in serum samples obtained after the exposure, but were present seven weeks to six months later. In each of the cases, no additional risk factors to HIV transmission were documented. Six of the seven health care workers developed a syndrome consistent with acute HIV infection, variably characterized by fever, sore throat, headache, myalgias, neuralgias, nausea, vomiting, diarrhea, macular (and occasionally urticarial) rashes, lymphadenopathy, leukopenia, thrombocytopenia, and anicteric hepatitis.

Despite these alarming occurrences, we must underscore that the risk remains extremely small. The denominator for these seven formally reported cases — that is, the number of persons who have been exposed to the blood, body fluids, or tissues of infected patients — must be enormous. It is also important to remember that several surveys document the infrequency of seroconversion following needlestick, wound, or mucosal exposure:

(1) In a nationwide study coordinated by the Centers for Disease Control, only one of 1,097 health-care workers (cited above as Case 2) demonstrated seroconversion. Included in this study were 969 persons with needlestick injuries or cuts inflicted by sharp objects, 70 persons with open wounds exposed to blood, and 58 persons with mucous membranes exposed to blood.[7]

(2) Surveillance at the National Institutes of Health indicated that none of 150 workers with percutaneous or mucous membrane exposures to blood or body fluids from AIDS patients developed seroconversion.[8]

(3) Surveillance at San Francisco General Hospital indicated that none of 94 persons with a total of 342 exposures (including 129 needlestick injuries and 213 splashes) demonstrated seroconversion. The authors of this latter, recent report noted that their study group represented "one of the most highly exposed cohorts of health care workers in the world."[9]

It still seems reasonable to conclude that the risk of nosocomial transmission of HIV is extremely low, and that recommended safeguards are adequate.[10] However, the recent reports support two conclusions: (1) *blood precautions* (appropriate for hepatitis B) should apply to *all* blood and body fluid exposures; and (2) occasional accidents *will* happen, despite the best safeguards. We must apply known methods for self-protection, and we must do whatever we can to reduce the exposure risk of other health care workers (Table).

TABLE

SOME MEASURES TO PREVENT NOSOCOMIAL TRANSMISSION OF HIV TO HEALTH CARE WORKERS

TO PROTECT OURSELVES

1. Wear rubber gloves upon any anticipated exposure to blood or body fluids (and keep a pair in the car for emergencies).
2. Wear eyeglasses or goggles during procedures which might cause blood splashes.

TO PROTECT OTHER HEALTH CARE WORKERS

1. Notify health care workers of diagnoses (e.g., AIDS, HIV infection, hepatitis) for which blood precautions are especially necessary.
2. Batch blood tests. Minimize the number of phlebotomies by having all necessary tests at the same time. Don't indulge in the luxury of requesting a separate phlebotomy for the one non-urgent test you forgot to order.
3. Plan vascular access. In seriously ill patients who are "difficult to stick", err toward the side of physician-placed central lines (with due attention to the risk of catheter-related sepsis).
4. Set a good example. Observe infection control guidelines such as handwashing and isolation technique.

HIV seroconversion in a dentist without other risk factors has now been reported in the press,[11] and it seems only a matter of time before similar experiences occur in physicians. However, we must remember that all seven published cases have involved female health care workers other than physicians. The new wave of concern about HIV transmission could cause a critical shortage of hospital workers. We must provide good examples. We must demonstrate that we recognize the need to be careful — to utilize known preventive measures — but that we are also willing to take appropriate care of these patients.

These observations indicate the urgency of effective legislation pertaining to HIV infection. Legislation is needed not only to stem the epidemic tide of new infections in the community, but also to protect health care workers. In the coming months, we plan additional editorials pertaining to these issues. It is a time to avoid panic — but to demonstrate appropriate concern. We must demonstrate that our concern is in the deepest interests of the society we serve.

— CSB

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ON THE COVER: DANIEL WARREN BRICKELL, M.D., 1824-1881

The subject of our cover story, Daniel Warren Brickell, is a native South Carolinian who pursued a distinguished career in other parts of the South, notably Mississippi and Louisiana. Of Huguenot, German, and Irish extraction and a member of the Brickell, Blake, and White families who were some of the earliest settlers of the state, Dr. Brickell was the son of an attorney, William Augustus, and the grandson of a physician, Dr. James Brickell. The latter Dr. Brickell married Elizabeth May White and practiced in the parish of St. John's, Berkeley, before moving to a plantation in Lexington District. Daniel Warren was a cousin of Col. Edward Brickell White, well-known architect, who designed many churches and buildings in South Carolina, among them Grace Church in Charleston and Trinity Cathedral in Columbia.

A biography of Daniel Warren Brickell is included in Warren Sawyer's article in this issue, "An Early Refutation of a States' Rights Medicine Doctrine." We will add only that after serving the Confederacy well during the War Between the States, he settled into private practice in New Orleans, giving special attention to "Diseases peculiar to females — medical and surgical."[1] He was one of the founders of the New Orleans School of Medicine and its professor of obstetrics. He was an editor of the *New Orleans Medical News and Hospital Gazette* and later the *Southern Journal of the Medical Sciences.*

Dr. Brickell maintained his ties with his native state. One of his good friends and colleagues was John Dickson Bruns, M.D., a native Charlestonian who became the professor of physiology and pathology in the New Orleans School of Medicine. Another colleague was Charleston born Samuel Logan, M.D., who was professor of surgery and later Dean at the same school.

The pictorial history of medicine which has been portrayed in these cover stories for the last eight years encourages the participation and contribution of other writers. The Waring Historical Library at the Medical University of South Carolina solicits additional biographical information on people, places and events which contributed to our state's medical history. Inquiries and contributions to the library should be directed to the curator at the library.

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The cover photograph of D. W. Brickell is from the Rudolph Matas *History of Medicine in Louisiana*, edited by John Duffy, Louisiana State University Press, 1958-1962, vol. 2, opposite p. 179. It is reprinted with grateful appreciation.

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SOUTH CAROLINA MEDICAL ASSOCIATION
AUXILIARY

AMERICAN MEDICAL ASSOCIATION AUXILIARY ANNUAL SESSION

The 64th Annual Session of the American Medical Association Auxiliary was held at the Drake Hotel in Chicago, Illinois, June 21-24, 1987.

South Carolina delegates were Madge Littlejohn, Newberry, Presidential Delegate; Mary James, Union; Marjorie Stands, Columbia; Betsy Terry, Greenville; Jessie Little, Fort Mill; Virginia Johnson, Orangeburg; and Linda Galphin, Lexington. Alternates were Pat Duncan, Greenville; Isabelle Rowland, Columbia; and Saundra Smoak, Orangeburg. Attending, in addition to the delegates, were Billie Brady, Greenville, Past AMA Auxiliary President; and Sheila Davis, Pinewood, AMA Auxiliary Southern Regional Director. Mrs. Davis was reelected to this position.

On Sunday morning, June 21, committee breakout sessions on AMA-ERF, Health Projects, Legislation, and Membership were held. Pat Durham (Mrs. Mylie E., Jr.) of Houston, Texas, AMA Auxiliary President, opened the meeting of the House of Delegates at 5:00 p.m. The presentation of state presidents was most impressive. The keynote address was delivered by The Honorable Donald H. Rumsfeld, former Secretary of Defense.

On Monday, June 22, Reference Committee Hearings were held. Sheila Davis was Chairman of the Bylaws Reference Committee. During the luncheon afterwards, AMA Auxiliary Past Presidents and Honorary Members were honored on the occasion of the 65th Anniversary of the AMA Auxiliary. The luncheon speaker was Mark Shields, a syndicated columnist, who provided us with a humorous look at the Democratic and Republican parties.

At the afternoon session, the 1987-88 officers were elected, and nominations were made for the 1988 nominating committee. Our 1986-87 state report was given by Madge Littlejohn, President of the SCMA Auxiliary, in the absence of Susanne Black, M.D., Immediate Past President. South Carolina received two membership awards for having organized a new county, Georgetown, and for having an increase in membership for 1986-87.

On Tuesday, June 23, the following resolutions were passed by the House of Delegates: Education on the Hazards of All Terrain Vehicles (ATVs); Support for Smoke-free Health Care Facilities; Participation in the AMA Adolescent Health Initiative; Education on the Importance of Child Water Safety; Education for the Prevention of Elder Abuse; Continuation of Seatbelt Education and Support of Mandatory Legislation; and Promotion of AIDS Education for Youth as directed by the AMA. AMA Auxiliary Bylaws were amended to provide that the AMA Auxiliary Immediate Past President automatically be a member of the AMA Auxiliary Nominating Committee. Oprah Winfrey, talk show hostess and actress, spoke at the luncheon on "How to be a Good Communicator."

On Wednesday, Dr. John J. Coury, Jr., President, American Medical Association, addressed the House of Delegates on the AMA's current health care concerns. Other speakers were Dr. Joseph L. Hatch, AMPAC Board Chairman; Dr. Robert E. McAfee, President of AMA-ERF; and Dr. John E. Chapman, Dean, Vanderbilt University School of Medicine.

The installation of officers of the AMA Auxiliary was held on Wednesday. Betty Szewczyk (Mrs. Edward) from Belleville, Illinois, was installed as President for 1987-88. Mrs. Szewczyk's activities have always focused on programs involving family and children.

The SCMA Auxiliary Delegates gained very valuable information, to be used in our own auxiliaries, and we appreciated the privilege of representing SCMAA. The AMAA is a vital organization which really works for the betterment of medicine and for all people in our communities.

Mary James (Mrs. W. Stanford)
SCMA Auxiliary President-Elect

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—Ann Jillian

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Contraindications: Known hypersensitivity to the drug.

Warnings: Warn patients that mental and/or physical abilities required for tasks such as driving or operating machinery may be impaired, as may be mental alertness in children, and that concomitant use with alcohol or CNS depressants may have an additive effect. Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage. Withdrawal symptoms (including convulsions) reported after abrupt cessation of extended use of excessive doses are similar to those seen with barbiturates. Milder symptoms reported infrequently when continuous therapy is abruptly ended. Avoid abrupt discontinuation; gradually taper dosage.

> ***Usage in Pregnancy:*** **Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically. Due to isolated reports of exacerbation, use with caution in patients with porphyria.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Usual Daily Dosage: Individualize for maximum beneficial effects. *Oral—Adults:* Mild and moderate anxiety disorders and symptoms, 5 or 10 mg *t.i.d.* or *q.i.d.;* severe states, 20 or 25 mg *t.i.d.* or *q.i.d. Geriatric patients:* 5 mg *b.i.d.* to *q.i.d.* (See Precautions.)

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CARE OF THE PATIENT WITH A PROSTHETIC HEART VALVE*

STEPHEN R. LEONARD, M.D.
FRED A. CRAWFORD, JR., M.D.

Approximately 35,000 patients undergo cardiac valve replacement each year in the United States. As a result, patients with prosthetic heart valves are likely to be encountered by all types of physicians in their daily practice. Following recovery from surgery, many of these patients return to their primary physicians for long-term followup. Familiarity with the diagnosis and treatment of the unique problems which may be encountered in such patients is essential. At other times, these patients are encountered at the time of trauma, surgical procedures, dental work and the like. Appropriate management of anticoagulation, antibiotic prophylaxis, etc. is essential in order to decrease the likelihood of a complication associated with a prosthetic valve.

Although there is a trend toward valve repair when possible, the majority of patients undergoing valve surgery today will receive a prosthetic device. Prosthetic valves can be divided into two major categories, tissue valves and mechanical valves (Table I). The decision as to the type of valve chosen (tissue vs. mechanical) may be based on patient preference, surgeon or cardiologist preference, or more commonly on more specific indications or contraindications such as hemodynamic function, risk of anticoagulation, patient age, and patient compliance. At the Medical University of South Carolina, approximately 65 percent of patients receive mechanical valves and 35 percent tissue valves.

TABLE I.

Current Valve Prostheses

- Biological (Tissue)
    - Porcine
        - Hancock
        - Carpentier-Edwards
    - Pericardial
        - Ionescu-Shiley
    - Homografts
- Mechanical
    - Ball-In-Cage
        - Starr-Edwards
    - Tilting Disc
        - Bjork-Shiley
        - Lillehei-Kastor
        - Omniscience
        - Medtronics-Hall
        - St. Jude Medical

It is essential that the physician managing these patients know what kind of valve the patient has. Such patients are furnished with an identification card by the manufacturer which specifies the type

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of valve, serial number, and date of implantation. If doubt persists, the operating surgeon should be contacted. Most valves are radiopaque and can be identified from routine chest x-ray. However, the St. Jude valve may not be readily apparent even to the experienced examiner and, therefore, the absence of an obvious valve on chest x-ray should not necessarily lead one to the conclusion that a valve is not present.

All prosthetic heart valves are associated with complications, including primary valve failure, thromboembolism, infection, and paravalvular leaks. The incidence of these complications varies with the type of valve and with the patient in whom it is implanted. These complications will be briefly discussed, including prophylactic measures for preventing them as well as management should they occur.

PRIMARY VALVE FAILURE

Primary valve failure occurs as the result of poor design, faulty manufacturing process, or gradual degeneration. While primary valve failure of mechanical valves was not uncommon in the early days of valve surgery, it is extremely rare today and, with few exceptions, can be considered a random event. Recent problems with strut fracture and disc embolization in one model of the Bjork-Shiley tilting disc valve have resulted in this particular model being withdrawn from the market. Patients with these valves remaining in place are at a slight risk of valve failure. Sudden cardiac decompensation associated with a change in valve sounds in any patient with a mechanical heart valve should alert the physician to actual or impending valve failure. Such patients should be promptly referred for definitive management.

In contrast to mechanical valves, tissue valves gradually deteriorate with time and approximately 30 percent fail by ten years (Figure 1). Failure may be gradual due to deterioration and progressive calcification of the valve leaflets or may occur suddenly as a result of a cusp tear. Failure may occur any time after implantation but increases with time. Valve failure is acceler-

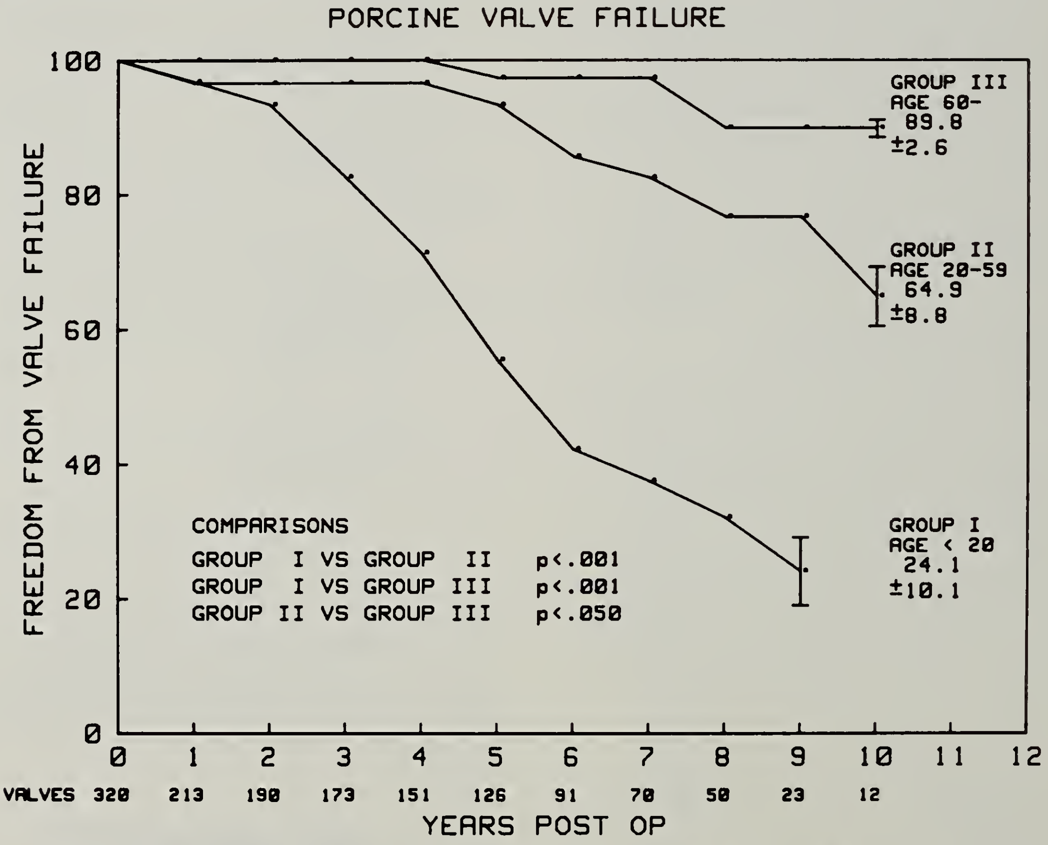

FIGURE 1: *VALVE* Survival Curves for (1) patients ≤ 20 years old (Group I), (2) patients age 20 - 59 (Group II) and (3) patients over age 60 (Group III). By ten years, more than 75% of tissue valves in patients less than age 20 have failed as opposed to only 10% in patients over age 60.

ated in children[1] and in patients with renal failure but is infrequent in older patients (Figure 1). Again, sudden cardiac decompensation should alert the physician to tissue valve failure. More subtle, however, is the gradual failure of tissue valves. Detection requires careful patient followup with careful auscultation, and is perhaps best detected by echocardiography and Doppler examination at periodic intervals. A high index of suspicion is a good ally in the followup of patients with prosthetic valves. When valve failure is detected, early elective reoperation can be carried out with only slightly increased operative risk as opposed to the significantly increased risks in the patient who presents with advanced problems secondary to valve failure.

THROMBOEMBOLISM

Thromboembolic complications may occur in any patient following valve replacement. In general, thromboembolism is more common following mitral valve replacement than following aortic valve replacement and more common with mechanical valves than with tissue valves.[2, 3] Thromboembolic rates may be increased in patients in chronic atrial fibrillation and in those with an enlarged left atrium. Thromboembolism most commonly presents as transient or permanent neurological deficits but may also occur as myocardial infarctions, ischemic bowel, or distal extremity ischemia or gangrene. Less commonly it presents as valve thrombosis (this being rare with tissue and ball-in-cage valves and more common with tilting disc valves).

All adult patients with mechanical heart valve prostheses should be anticoagulated with Coumadin.[4] Children may represent a slightly different population but this has not been definitely established. It is our practice to maintain the prothrombin time at 1.5-2.0 times control in these patients. Unless specifically contraindicated, patients with tissue valves should be anticoagulated to 1.5 times control for 2-3 months.[5, 6] After this time anticoagulation may be discontinued except in patients with chronic atrial fibrillation or a significantly enlarged left atrium. The responsible physician should be aware of drugs which interfere with Coumadin (Table II) and avoid concurrent use of these agents if possible.[7]

Any patient who presents with a thromboembolic episode should be carefully evaluated to be certain that the prothrombin time is optimal and valve function is unchanged. Such evaluation may include physical examination, echocardiography with Doppler, flouroscopy, and rarely, catheterization. Sudden cardiac decompensation associated with a change in valve sounds or a new murmur of stenosis or insufficiency may indicate valve thrombosis. This may be confirmed by the above techniques. Valve thrombosis is a cardiac emergency and, while some patients have been successfully managed with thromboembolytic agents, most will require emergency reoperation for valve debridement or replacement.

Anticoagulation itself is not without hazard as bleeding complications occur even in those whose prothrombin time is maintained in the therapeutic range.[3] When the prothrombin time becomes excessively prolonged, the patient should be managed initially by withholding Coumadin, thus allowing the prothrombin time to return to the therapeutic range by monitoring with repeated determinations. If bleeding complications occur associated with an excessively prolonged prothrombin time, fresh frozen plasma may be administered to return the prothrombin time more

TABLE II.

Drugs That May Alter the Response to Coumadin

Potentiation of Action of Coumadin:
- Nonsteroidal anti-inflammatory drugs (Phenylbutazone, Indomethacin, Clofibrate)
- Salicylates
- Sulfisoxazole
- Chloramphenicol
- Allopurinol
- Nortriptyline
- Cimetidine
- Quinidine
- Anabolic steroids

Interference with Action of Coumadin:
- Barbiturates
- Glutethimide
- Griseofulvin
- Rifampin
- Oral contraceptives

quickly toward normal. Vitamin K should never be administered as this is associated with an increased incidence of valve thrombosis or thromboembolism. If a specific contraindication to continued anticoagulation develops, then Coumadin may be discontinued and replaced with antiplatelet agents (aspirin, dipyridamole) acknowledging that the incidence of thromboembolic complications will most likely be increased.

The management of the anticoagulated patient who requires elective surgery is very important. We recommend that Coumadin be discontinued and when the prothrombin time begins to return to normal, the patient should be hospitalized and started on intravenous heparin. Heparin may be discontinued six to eight hours before the planned surgery and restarted 24 hours postoperatively. Coumadin can then be resumed when the patient is taking liquids by mouth and the heparin discontinued once the prothrombin time reaches therapeutic levels. While this technique requires additional hospital stay, we feel it is the best way to handle this particular problem. Should the physician taking care of the patient in any of the above situations have any questions about appropriate management of anticoagulation, he or she should contact the surgeon who implanted the valve.

Management of the woman with a prosthetic valve who is or who desires to become pregnant is extraordinarily difficult. For the individual with a mechanical valve, the hypercoagulable state of pregnancy predisposes to thromboembolic complications. Coumadin crosses the placenta and may be associated with spontaneous abortion as well as congenital malformations.[8] Successful management of these patients has been reported using subcutaneous heparin during the first trimester and the last month of pregnancy.[9] This situation obviously requires the coordinated efforts of the obstetrician, cardiologist, and family physician. For those women who need valve replacement and who strongly desire to have children, we prefer to first implant a tissue valve, thus allowing the patient to become pregnant without the need for anticoagulation. In all probability this valve will subsequently fail and can then be replaced with a more durable valve.

INFECTION

Infection of a prosthetic valve is a dreaded complication with a high mortality rate. Most series report approximately a four percent incidence of prosthetic valve endocarditis. Prosthetic valve endocarditis may be divided into two categories, early and late. Early endocarditis is that which occurs within sixty days of valve replacement and is usually caused by intraoperative contamination or by noncardiac infections in the immediate postoperative period (such as urinary tract infection, pneumonia, or phlebitis). The organisms involved are usually Staphylococcus epidermidis, Staphylococcus aureus, or gram negative bacilli. Mortality is extremely high (68 to 87 percent),[10, 11] especially with gram negative infections. Late prosthetic endocarditis occurs more than 60 days postoperatively and is usually more successfully treated medically. Like subacute bacterial endocarditis of native cardiac valves, the etiologic event is an unrelated infection (e.g., dermatologic infection) or iatrogenic (e.g., dental procedure or genitourinary instrumentation). The organisms involved are usually Streptococcus species with Staphylococcal and gram-negative organisms being less common. Mortality is still high but significantly less than that of early valve endocarditis (36 to 42 percent).[10, 11]

Prosthetic valve endocarditis may present as unexplained fever associated with new murmurs, systemic emboli, and petechiae. Diagnosis is confirmed by blood cultures. Antibiotic therapy must be initiated promptly and is continued for six weeks. Some patients will respond to antibiotic therapy alone but valve replacement is frequently necessary. Indications for valve replacement are congestive heart failure, fungal etiology, new onset heart block, unstable prosthesis on fluoroscopy, large or multiple emboli, valve obstruction, and poor response to adequate antibiotic therapy.[12, 13] The major determinant of recent improvements in survival is early valve replacement, especially if congestive heart failure is present.[13]

Patients undergoing elective valve replacement should have no foci of chronic infection present. This requires completion of necessary dental work prior to valve replacement. Antibiotic prophylaxis for prevention of prosthetic valve endocarditis is essential in all such patients who undergo genitourinary instrumentation, dental procedures, and other surgical procedures. In patients with

TABLE III.

Prophylaxis Against Endocarditis[14]

Dental and Respiratory Tract Procedures[°]
Genitourinary and Gastrointestinal Procedures[†]

Ampicillin 1-2 gm IM or IV

plus

Gentamycin 1.5 mg/kg IM or IV
30 minutes before and 8 hours after procedure
(Second parenteral dose may be substituted with
1 gm oral penicillin V 6 hours after procedure)

For penicillin-allergic patients:

Erythromycin 1 gm PO 1 hour before and
500 mg 6 hours after procedure

OR

Vancomycin 1 gm IV slowly before procedure
(no repeat dose)

[°] Include all dental procedures likely to induce gingival bleeding, tonsillectomy, biopsy of or surgery on respiratory mucosa, bronchoscopy

[†] Includes cystoscopy, prostatic surgery, urethral catheterization and genitourinary surgery, vaginal hysterectomy, biliary surgery, colonic surgery, esophageal dilitation and surgery, colonoscopy, upper GI endoscopy with biopsy, and proctosigmoidoscopy with biopsy.

prosthetic valves who are hospitalized for other causes, meticulous precautions should be applied when any type of vascular access (intravenous, intra-arterial lines, Swan-Ganz catheters) are needed and these lines should then be removed as quickly as possible. Table III lists an aggressive prophylactic antibiotic regimen for patients with not only a prosthetic heart valve but with other cardiac conditions as well, such as congenital anomalies, rheumatic valve disease, mitral valve prolapse, and implanted pacemakers or vascular grafts.[14] Intramuscular injections should not be given to patients with prosthetic valves who are anticoagulated. If there is concern about a specific organism, the prophylactic regimen should take this into account.

PARAVALVULAR LEAKS

Because of improved surgical techniques, paravalvular leaks are relatively uncommon today. They occur most commonly after valve replacement for infection. When the leak is hemodynamically insignificant and not associated with hemolysis, not specific therapy is necessary. However, if the leak causes congestive heart failure or produces hemolysis with resulting anemia, reoperation and replacement of the valve may be necessary.

SUMMARY

Patients who undergo successful cardiac valve replacement obtain significant benefit as a result of this procedure. However, they are always at risk of complications which occur with prosthetic valves. Avoidance of these complications and treatment when they occur requires careful followup and cooperation among the primary care physician, the cardiologist, and the cardiac surgeon. ☐

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Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically. Due to isolated reports of exacerbation, use with caution in patients with porphyria.

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MORE EVIDENCE FOR SELECTIVE USE OF INTRAOPERATIVE CHOLANGIOGRAPHY*

G. STEVEN SUITS, M.D.
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Intraoperative cholangiography (IOC) has become a standard part of the operative management of gallbladder disease and in many centers is carried out on a routine basis.[1, 2, 3, 4, 5, 6] Other surgeons have limited use of IOC to those patients in whom clinical indicators of common bile duct (CBD) stones were present.[7, 8, 9, 10] Still others have successfully treated biliary tract disease with little use of IOC.[11]

The rationale given for the routine use of IOC includes: (1) reducing negative or unnecessary choledochotomies; (2) finding of unsuspected CBD stones; and (3) decreasing likelihood of CBD injury by identifying cystic duct anomalies. Those who argue against routine use of IOC counter that (1) a significant number of choledochotomies are required because of falsely positive cholangiograms; (2) the incidence of retained or residual CBD stones in patients with no clinical indicators of choledocholithiasis is low; (3) the incidence of unsuspected choledocholithiasis is low; and (4) the increased expense of the routine use of IOC is significant. This review was done to determine if the routine use of IOC in our institution could be abandoned in favor of selective use of IOC for broad clinical indications.

MATERIALS AND METHODS

Hospital records of 439 patients who had undergone cholecystectomy between 1980 and 1983 at Spartanburg Regional Medical Center were reviewed. Demographic data, urgency of procedure, clinical history or signs suggestive of choledocholithiasis, operative procedures and results of operative procedures and results of operation and IOC were noted. Data suggestive of biliary duct stones included abnormalities of alkaline phosphatase, SGOT, SGPT, bilirubin, LDH, amylase, enlarged cystic duct, enlarged CBD, history of jaundice, history of light-colored stools, history of pancreatitis, and palpable CBD stones. IOC was routinely used except in a few patients who underwent CBD exploration without antecedent IOC, because of unequivocal indications for choledochotomy. Significance was determined by two sample Z tests.

The cost of IOC was computed from a list of typical charges including the hospital technical fee for the roentgenogram, the radiologist's fee, the surgeon's extra fee for IOC, the anesthesiologist's fee for five minutes, and the operating room charge for an additional five minutes.

RESULTS

Of 439 patients, 339 were female and 100 were male. Four hundred operations (91.1 percent) were elective, and 39 (8.9 percent) were done as emergency procedures. There were no cases of elective cholecystectomy on asymptomatic patients or incidental cholecystectomy during other abdominal procedures. The average length of stay in hospitals was 9.8 days for cholecystectomy without CBD exploration and 12.7 days for those undergoing CBD exploration ($p<0.05$). Length of stay after CBD exploration was similar for patients who had ductal stones and those who did not (12.7 vs 12.2 days, NS). Of the two patients who died (operative mortality: 0.5 percent), one had cholecystectomy alone, and one had CBD exploration.

IOC was done in 427 patients; 62 were positive, and 365 were negative (Table I). None of the 365 patients who had negative tests required CBD exploration, and none of them developed postoperative choledocholithiasis during two to four years after cholecystectomy. The absence of false negatives reconfirms the sensitivity of IOC (100 percent in this series). Of the 62 patients who had positive cholangiograms, 41 had CBD abnormalities on exploration, and 21 had normal bile ducts, representing a specificity of 61.1 percent. Two patients had unsuccessful attempts at IOC (technical inadequacy: 0.5 percent), and 15 patients required repeated films to clear suspected artifacts, such as air bubbles (technical difficulty: 3.5 percent).

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Altogether CBD exploration was done in 75 patients (17.1 percent), 55 of whom had positive findings (73.3 percent of explorations, 12.5 percent of series). Twelve patients underwent CBD explorations without IOC (Table II), and of these, eleven had choledocholithiasis (accuracy: 91.7 percent). There were no reports of inadvertent CBD injury.

Table III shows correlation of the number of indications with number of patients who had positive findings at CBD exploration. Two patients (0.5 percent) had unsuspected choledocholithiasis (0 indicators). On the other hand, seven (33 percent) of 21 patients who had falsely positive cholangiograms did not have positive indicators. Of 365 patients who had negative cholangiograms, 182 did not have any positive indicators of CBD disease.

The cost of IOC was approximately $300 added to the cost of cholecystectomy (Table IV).

DISCUSSION

Since its first description in 1932,[12] the role of IOC has been debated in many publications for more than half a century. Certainly, biliary tract surgeons appreciate the value of avoiding injury to CBD, and use of IOC on a routine basis has offered the opportunity to decrease significantly the number of negative CBD explorations. In addition, stone recovery could be improved, averaging about 35 percent.[3, 4]

TABLE I

Result	*Number*	*Percent*
True Negative	365	100
False Negative	0	0
True Positive	41	66.1
False Positive	21	33.9

TABLE II

Indications for CBD Exploration Without IOC

12 Patients	
Enlarged CBD (> 1.2 mm)	8
History of Jaundice	3
Small Stones	1
Fever	1
Palpable CBD Stones	4

TABLE III

Correlation of Number of Indications With CBD Abnormalities

Indications	*Patients*	*Percent*
0	2	3.6
1	10	18.2
2	10	18.2
3+	33	60.0

TABLE IV

Estimated Additional Cost Associated With IOC During Cholecystectomy

	1980	*1981*	*1982*	*1983*
X-Ray (technical fee)	$51	66	71	75
Radiologist (prof fee)	20	22	24	26
Surgeon	NA	NA	NA	50-100
Anesthesiologist	NA	NA	NA	59
O.R.	NA	NA	22	22
NA — Not Available				$232-282

When IOC is employed routinely, the overall incidence of CBD exploration is decreased by as much as 17 percent,[3, 4] reducing overall morbidity and mortality, since CBD exploration carries significantly more risk than cholecystectomy alone (morbidity: 4.9 percent vs 2.0 percent).[3] Also, to support routine use of IOC, Doyle et al. reported that, when IOC is not routine, the morbidity and mortality of negative CBD exploration equals that of positive exploration. Further, when IOC is used routinely, risk of negative exploration is not as high as that of positive exploration. Others have not experienced increased complications with negative exploration.[13]

Injury to the CBD is an unfortunate and serious occurrence in the hands of both experienced and inexperienced surgeons.[4] Presumably, contrast study of the extrahepatic biliary tree helps to prevent such injuries. If, on the other hand, injuries occur because of misidentification of CBD as cystic duct, then injury may take place during IOC instead of being prevented by it.[4] Furthermore, since many surgeons, who routinely use IOC, transect the cystic duct and remove the gallbladder prior to IOC or remove the gallbladder while awaiting processing of the cholangiogram, the advantage of routine IOC in preventing CBD injury is negated. Despite common anatomical variations of the biliary tract (21.9 percent), a CBD injury is infrequent even without the routine use of IOC,[11] as also borne out by the present series.

False positive cholangiograms lead to unnecessary CBD explorations with associated increase of morbidity and mortality. The present review had 4.9 percent false positives, which is similar to a review of previous publications.[8]

The question of whether or not routine IOC decreases the incidence of retained CBD stones is not clear. Gerber and Apt report only 0.2 percent incidence of retained stones, when IOC was not used routinely.[9] Series in which IOC was used routinely do not show improvement on this incidence. In the present series the only retained CBD stones documented were found in one patient who had undergone a positive CBD exploration and returned approximately two years later with what was probably recurrent choledocholithiasis.

What about finding unsuspected choledocholithiasis by IOC? Reports vary from 0.8 to 10 percent of patients undergoing IOC.[1] In one large review of 4,665 cases, unsuspected stones occurred in 3.7 percent of cholangiograms.[8] Our series showed only 0.5 percent unsuspected stones, when the previously mentioned clinical indicators were used as an indication for IOC or CBD exploration. Others utilizing similar guidelines, have reported as low as zero percent of CBD stones that were unsuspected by the indicators.[2, 8, 10]

The finding of unsuspected CBD stones is low in most series and can be decreased further by more liberal use of clinical indicators.[2, 8, 10] Deitch and Voci submit that routine IOC will reveal few additional stones, if broad criteria are used to assess the risk of choledocholithiasis.[8]

Confusing even further the question of when to use IOC is our lack of understanding about the natural history of clinically undetected bile duct stones. Gerber and Apt[9] report that among 11,288 cholecystectomies only 0.3 percent of patients developed clinical signs or symptoms from unrecognized CBD stones. If a number of unsuspected stones is calculated on the basis of 3.7 percent as reported by Deitch and Voci,[8] 418 cases would have been expected in Gerber's series rather than the 34 he reported. These inconsistencies suggest that more than 90 percent of unrecognized stones either pass spontaneously, dissolve, or remain clinically insignificant. Levine draws a similar conclusion by stating that only ten percent of undetected CBD stones will ever become symptomatic.[14]

Of the 55 patients who had documented CBD disease in this series, all except two would have been suspected utilizing selective indications for IOC instead of a policy of routine IOC. Assuming that only ten percent of unrecognized stones become clinically significant, 20 years would be required for one patient to become symptomatic from retained stones missed because of negative indicators and failure to do routine IOC. Also, 2,135 cholangiograms would be performed for every symptomatic retained CBD stone prevented.

Concerning cost, more than $640,000 would be spent for each symptomatic CBD stone prevented by routine use of IOC. Using broad indications for selective IOC or CBD exploration, 191 patients in this study could have foregone cholangiograms and would have represented a savings in 1983 dollars of at least $44,312, or $11,078 annually.

SUMMARY

Intraoperative cholangiography (IOC) is an important and valuable part of operative care of biliary tract disease. By liberal use of broad clinical and laboratory indicators of CBD disease, IOC can be used selectively rather than routinely without incurring significant risk of overlooking asymptomatic CBD stones. When certain clinical indicators (Table II) are present, IOC should be done and should be relied upon as a highly sensitive test. In the absence of all indicators one can proceed confidently with cholecystectomy alone. CBD exploration should, of course, follow any positive or equivocal intraoperative cholangiogram. The cost savings realized by such an approach is also consistent with current emphasis on cost containment in the health care industry. ☐

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ASSOCIATION OF A PORCINE MITRAL VALVE WITH DEVELOPMENT OF A LEFT VENTRICULAR ANEURYSM*

ROBERT A. PRINGLE, JR., M.D.**
ROBERT B. LEMAN, M.D.
AMER CHAIKHOUNI, M.D.

This report describes a young man who developed a true left ventricular aneurysm following a porcine mitral valve replacement. This probably represents an unusual case where ventricular aneurysm developed directly because of a prosthetic valve, and not as a result of operative complications. It also describes the difficulty in making the diagnosis by non-invasive methods, and the usefulness of biplane ventriculography for clarification.

CASE REPORT

A 36-year-old black male with no history of rheumatic heart disease presented with exertional dyspnea in August of 1973. Cardiac catheterization at that time revealed 3 to 4+ mitral regurgitation with an enlarged left atrium and markedly dilated left ventricle with normal wall motion. He was treated medically with symptomatic improvement until a readmission in 1978 for progressively worsening sumptoms. Repeat catheterization demonstrated 4+ mitral regurgitation into an enlarged left atrium and the dilated left ventricle with normal wall motion. The patient underwent uncomplicated mitral valve replacemnt with a #33 Carpentier-Edwards porcine heterograft and he was followed for six years without complaints except for occasional fatigability.

Echocardiograms in July of 1982 and November of 1983 revealed a well-seated mitral valve, a markedly dilated left atrium (56 mm), a left ventricle with global reduction in contractility (EDD 70 mm), and paradoxical septal motion. On the 2-D echocardiogram there were no discrete wall motion abnormalities. The patient was readmitted in October, 1984, with progressive complaints of cardiac dysfunction, and repeat echocardiogram revealed a dilated left atrium and left ventricle, and abnormal prosthetic valve motion consistent with dehiscence anteriorly at the aorto-mitral annulus. Doppler echocardiogram detected turbulent flow that was interpreted to be mitral regurgitation. Catheterization revealed normal pulmonic and systemic ventricular pressures. Left ventriculogram demonstrated a dilated left ventricle with abnormal rocking motion of the prosthetic valve, and abnormal pooling of contrast into an area poorly defined by RAO left ventriculography. Coronary arteriograms were normal. Repeat catheterization with multiple views utilizing biplane cineangiography showed early pooling of contrast into a well-defined paradoxically moving area superior and antero-lateral to the main body of the left ventricle. The porcine valve moved towards this area during diastole.

It was felt that the abnormal movement of the valve and the abnormal area of contrast pooling probably represented either valvular dehiscence with pseudoventricularization of the left atrium, or left ventricular aneurysm. Reoperation revealed a dilated, hypertrophied left ventricle and a well-seated prosthetic valve without evidence of dehiscence or perivalvular leak. In the antero-lateral wall of the left ventricle there was a 30-40 ml aneurysm directly facing one of the porcine valve struts. The aneurysm extended superiorly into the left ventricular outflow tract. Externally, the aneurysm appeared as a small prominence immediately under the left atrial appendage in the lateral aspect of the left ventricular base. The aneurysm was easily separated from the pericardium and was not calcified. The left atrial appendage and the left inferior pulmonary vein were slightly compressed by the aneurysm. The porcine valve cusps were thickened and relatively immobile, and the cusp facing the aneurysm was rigid. On the ventricular surface of that cusp there was a dense fibrin thrombus. There was no evidence of circumflex artery occlusion or myocardial damage which could have occurred at the time of valve insertion. The valve was replaced with a #33 St. Jude valve, and the aneurysm was left alone because repairing it with a patch from the inside of the left ventricle would have caused left ventricular outflow obstruction and resection would have caused damage to the circumflex coronary artery at its origin. Post-operatively, the patient's hospital course was uneventful.

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DISCUSSION

The role of the prosthetic valves in the formation of ventricular aneurysms was suggested by MacVaugh et al.,[1] who described a subannular basal pseudoaneurysm resulting from a Starr-Edwards mitral valve replacement. Sutorius et al.,[2] described a left venticular aneurysm following placement of a Hancock porcine mitral valve, and attributed its development to technical difficulty at the time of surgery and calcification of the mitral valve annulus.

Although the causative role of the porcine valve in the development of the left ventricular aneurysm in this case can never be proved, the evidence towards it is strong. The patient has no coronary disease, and although a rare syndrome of spontaneous submitral and subaortic left ventricular aneurysm formation in young South African Bantu and Nigerian males has been described by Chesler et al.,[3] it is extremely unlikely that our patient spontaneously developed a new left ventricular aneurysm. The patient did not have an aneurysm at the time of his first cardiac catheterization and because no aneurysm was seen at the first valve operation, the ventricular aneurysm had to have developed after the first valve replacement. Additionally, there was no evidence of iatrogenic causes of an aneurysm on inspection at the time of surgery (i.e., an incidentally sutured circumflex artery, or damaged myocardium at the time of valve replacement). We are hypothesizing that the shearing force of anterograde flow of blood across a single, rigid mitral valve leaflet resulted in an abnormal rocking motion and contact between the valve strut and a hypertrophied lateral left ventricular wall and contributed to the development of the aneurysm by repeated trauma to the myocardium. We believe his symptoms were secondary to dysfunctional mitral valve in combination with the aneurysm. By replacing the faulty valve, his symptoms were partially relieved. Biplane cineangiography clearly demonstrated the entire valve moving toward the aneurysm during diastole, and contact between the valve struts and the hypertrophic left ventricular wall appeared.

Another interesting aspect of this patient involves the insensitivity of nonivasive measures in detecting the aneurysm. Multiple echocardiographers, reading technically adequate studies, detected a markedly dilated left ventricle, but discrete wall motion abnormalities involving the aneurysm were not seen. The last echocardiogram did not detect abnormal valve motion, but the 2-D image was interpreted as showing valvular dehiscence when in fact there was none. With the echocardiogram one could not appreciate the movement of the entire valve toward the aneurysm during diastole, rather it merely reflected the movement of one part of the sewing ring. In addition, the turbulent blood flow in the aneurysm was interpreted by Doppler studies as mitral regurgitation which did not exist. It was not until biplane cineangiography was performed that the size and location of the aneurysm were detected. In the previously mentioned articles, biplane cineangiography was used and it was suggested by the authors to be the method of choice for identification of subannular ventricular aneurysms as well.

Based on the amount of evidence favoring the de novo formation of a ventricular aneurysm following mitral valve replacement, coupled with no evidence for an iatrogenic cause, we feel that the valvular pathology as described contributed to the abnormal strut motion as demonstrated at surgery, resulting in the gradual formation of an LV aneurysm with associated symptoms. ☐

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NO HOPE — NO, NOT NEVER, EVER!

CHARLES R. SLOAN, M.D.*

So many times as we move around our hospital and our medical community, we see the wonderful things that our fellow physicians do and the miraculous things that are being accomplished with our increased medical and surgical capabilities and technology. Often these advances are almost unbelievable.

Occasionally, however, we see some things that should not have occurred and sometimes these unfortunate occurrences are preventable. I should like to relate one recent such experience.

A 71-year-old patient was in the hospital, again, for treatment of metastatic breast cancer. She had had a mastectomy three and a half years previously and had accepted with remarkable equanimity that the cancer was metastatic and would require close surveillance and probably future treatment. As things will happen, she did get recurrences and had treatment both as an in-patient and as an out-patient with a good degree of success. On this particular occasion, she had been brought in for excision of a painful recurrence and for intensive radiation. She was accepting this in her remarkably cheerful manner. Her acceptance of her fate over this three and a half year period has been an inspiration to her physicians and to all the paramedical people with whom she has been in contact.

On this particular admission, a group of physicians had been asked to see her in consultation and within this group was one who was extremely well-qualified medically and surgically but did not have the benefit of tempering and maturity that it seems only years of experience and much heartache can bring to the members of the medical profession.

One morning I walked into this patient's room and, instead of her usual bright smile and cheerful greeting, I found her to be in tears; almost uncontrollable in her sobbing. When the caring nurse and I had been able to quiet her sufficiently to ask the problem, she replied, "The new doctor who has been seeing me just told me that there is 'no hope.' "

How do you respond to a statement or situation such as this?

It would be naive to expect that any of us would always be in perfect control of the situations we encounter. The message, hopefully, of this little story is that practitioners of medicine, as well as all of the paramedical people, need ever to be alert not only to what we are saying to a patient but also the message that we convey by the things that we do not necessarily *say* but in some manner we *imply*.

Whether this qualified young physician actually said that there was "no hope," whether he implied it, or whether the patient for some reason simply assumed this to be the fact, we will never know. But for whatever reason, this patient who for three and half years had led a happy and productive life in spite of metastatic cancer, was now facing the conclusion that there was "no hope."

The fact is that on this particular occasion the local recurrence was surgically removed, the area was radiated, and the patient is now free of pain and is again out leading a fairly normal life. How she is feeling about herself of course is not known.

The issue is, what is "HOPE" and, whether we can define it or not, should there ever be an occasion when we should say or imply that there is "NO HOPE"?

HOPE is different things to different people. Obviously, to we physicians and surgeons, HOPE means that our patient is going to be cured completely and live a full and productive life. HOPE, if not a cure, then becomes a wish that the condition will be markedly alleviated and the patient will be free of pain and suffering. HOPE, in every circumstance, would mean that we wish for continuing quality of life.

Physicians daily face the absolute conclusion that some patients will not be cured, some conditions will not even be ameliorated, and too many will have a rapid, painful, devastating conclusion.

But to the PATIENT, HOPE may not be that at all. HOPE, I am sure, always includes an absence, or at least a diminution, of pain. But HOPE also to a patient may mean some very simple things that are particular to his or her life which do not necessarily occur to the physician.

---

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HOPE may be a wish to live long enough to see a son graduate from medical school, or even from high school, or to see him get that Eagle Scout award.

HOPE may be a wish to live long enough to see the radiant smiles as a daughter gets married, and to witness the ever present HOPE that appears on the face of the bride and groom.

HOPE may be a wish to be able to take that special trip with the husband or wife which has been planned and looked forward to for so many years.

HOPE may be something that seems so small but looms so large, such as just being able to be outside for a short time to see the beauty of fresh new roses in the garden that you have anticipated all winter long.

HOPE may be to spend the next Christmas with the family.

HOPE may be a simple wish to sit one more time and hold the hand of someone you love with all your heart and life and to watch again the changing colors of the sunset. To remember that all through life things change and that sometimes the next part of life, as the next colors of the sunset, may be the most beautiful of all.

HOPE may be the single most important healing force that we have.

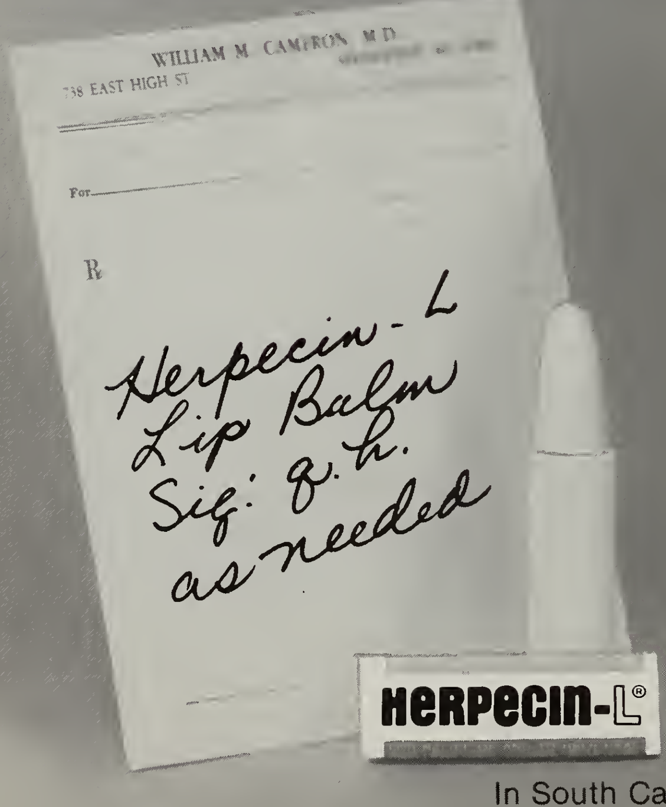
HOPE means never giving up.

HOPE is one of the three most beautiful words in our language — faith, HOPE, and love.

HOPE is the belief that joy will come.

Dickerson said, "HOPE is the thing with feathers that perches in the soul, and sings the tune without the words, and never stops at all."

HOPE that is seen is not HOPE at all; we HOPE for what we do not yet have and we wait for it patiently. □



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Editorials

SELF-EXPRESSION WELCOMED!

In these times of rapid social and economic change, various national medical journals have begun the practice of encouraging self-expression by regular features such as "A Piece of my Mind" or "*Ad Libitum.*" At the April meeting of the editorial board of *The Journal,* the possibility of our carrying such a feature was discussed. We concluded that this would be highly desirable, but questioned whether we could obtain enough unsolicited pieces of this kind to make the project self-sustaining.

Shortly thereafter, Dr. Charles R. Sloan — obviously motivated by a personal experience — submitted the essay featured in this issue entitled "No Hope? No, Not Never, Ever!" We wish to encourage similar self-expression by others. Such essays could range from a single paragraph to several pages of typed, double-spaced manuscript, and should be accompanied by our usual release of copyright. Sufficient interest in essays of this kind would allow us to launch this concept as a regular feature.

— CSB

TELLING THE TRUTH — AN OLD-FASHIONED IDEA THAT MAY RETURN

As physicians, all of us are daily subjected to sweeping statements that have very little or any truth embedded in them. The 1988 Presidential campaign has begun with the usual logorrhea. Irangate hearings clog up the television. The news media lets us know of the latest antics of the Bakkers and latest miracles of Oral Roberts. Some of our colleagues have indulged in this hyperbole. Advertisements tell us of medically supervised weight clinics that guarantee loss of three to seven pounds a week without hunger (ha! ha!) and medically supervised tanning clinics that promote the proper absorption of vitamins in winter (not to mention basal and squamous cell carcinoma and melanoma). If Diogenes were alive today, he might need a halogen spotlight to find a honest man.

Recently, my faith in truth-telling was restored by a two-page ad I saw in a large city newspaper in large print. It was so unusual I would like to repeat it here. "TESTING CARS IS A GOOD IDEA. DISCONNECTING ODOMETERS IS A LOUSY IDEA. That's a mistake we won't make at Chrysler again. Period."

"LET ME SET THE RECORD STRAIGHT.

For years, spot checking and road testing new cars and trucks that come off the assembly line with the odometers disengaged was standard industry practice. In our case, the average test mileage was forty miles.

Even though the practice wasn't illegal, some companies began connecting their odometers. We didn't. In retrospect, that was dumb. Since October, 1986, however, the odometer of every car and truck we built has been connected, including those in the test program.

A few cars — and I mean a few — were damaged in testing badly enough that they should not have been fixed and sold as new. That was a mistake in an otherwise valid quality assurance program. And now we have to make it right.

WHAT WE ARE DOING TO MAKE THINGS RIGHT. *(There followed a list of measures to be undertaken by Chrysler at the company's expense.)*

The quality testing program is a good pro-

> gram. But there were mistakes, and we were too slow in stopping them. Now they are stopped. Done. Finished. Over. Personally, I am proud of our products. Proud of the quality improvements we've made, so we're going to keep right on testing. Because without it, we couldn't have given America a five year or 50,000 mile protection five years ahead of everyone else. Or maintained our warranty leadership with seven years or 70,000 miles protection. I'm proud, too, of our leadership and safety related recalls.
>
> But I'm not proud of this episode. Not at all. As Harry Truman once said, 'The buck stops here.' It just stopped. Period."

Did Chrysler foul up? Indeed they did. But they didn't foul up when they named the spokesman who spoke those words about Chrysler's odometer embarrassment. Anyone in American business who talks like that is either mighty sure of his job or mighty brave, and Lee Iacocca is both. I am not a big Iacocca man. I read the book, but I don't plan to see the film. I'm not in mourning because he isn't running for President. But he is one of the great business leaders of our time, and a few weeks ago he showed why. Chrysler, Lee Iacocca's company, got itself slapped with federal charges when thousands of cars were taken off the line and test driven with the odometers disconnected. Worse still, the charges were that some of the cars were damaged during the unrecorded mileage, then repaired, and sold as new. It is not hard to envision what most American corporate big chiefs would do in such circumstances. (Particularly one of Chrysler's biggest competitors who recently paid three-quarters of a billion dollars to buy out and silence one of their loudest and most able critics on the Board of Directors while maintaining they were too poor to give raises to their workers.) We've all seen too many of them there. The usual public relations drill when a corporation is caught out of line resembles an octopus — it emits clouds of ink; it dances through the specifics and onto the polysyllabic generalities; it hems, it haws, and ducks; it then calls in a couple of regiments of PR consultants and spokesmen while the corporation tries to escape in the confusion.

But Lee Iacocca is not your usual corporate career warrior. He didn't run and hide. His advertisement in most major newspapers in the country quoted above is one that is clear, forceful, and characteristic of the man. Certainly he was stating the obvious; but that's what's remarkable. The obvious is what most corporate presidents find hardest to state at such a time. In full page ads all over the country, Iacocca acknowledged that he and his gang "had messed up but meant to make it good." I do not know whether Iacocca knows all that much about cars so far as their technical components are concerned. But he knows as much about people — the customers for cars — as anybody on the scene today. Which is why he is a super salesman both in selling cars and in selling Congress on co-signing the note that underwrote the Chrysler turnaround.

At a time in American business history which has seen CYA (cover your assets) replace PDQ in too many corporations, the Chrysler chief seems to realize something that the old capitalists knew very well: Sometimes the best way to cover your assets is to fling yourself wholeheartedly into the challenge of multiplying the whole corporate team's assets. Iacocca clearly recognizes that customers have grown weary of smoke screen rhetoric and smooth excuses. Too many businessmen have fallen into the belief that communication skills mean an ability to dazzle folks with fancy verbal footwork, that salesmanship means sophistry, and that leadership means evasion of accountability. Iacocca is one of the few at his level who displays an instinctive certainty that true leadership is exercised from out front, that the chief really earns his pay and perks by being there on the job when things are becoming unstuck. And above all, Iacocca is a master of that ultimate communication skill — plain talk. Plain talk is more rare than it ought to be in the marketplace today. Merchandisers have become enamored with the mistaken notion that ordinary Americans are truly and permanently fooled by the deft use of uppity and ambiguous words. "Pre-owned automobile" does sound fancier than "used car," at least at first. But even at first, most buyers know that a "pre-owned" pickup truck with 350,000 miles on it put there by an executive junk dealer who used it only for deliveries on dirt roads is a pickup that has probably been "pre-owned" to pieces.

When a slick investment counsellor in the $1500 suit and air-conditioned voice describes his investment scheme as having only "limited predetermined risk" while offering "unlimited profit potential," most of the listeners eventually can work out what this means in English. "Limited predetermined risk" means that all you can lose in the scheme is everything you predetermined to put into it. The "unlimited" term refers to the possibility that the scheme could multiply your money to infinity, which possibility is somewhat less likely than the possibility that the tree in your back yard could grow to the sky. When the gushing executives of a department store, oil company, or credit card tell you they are announcing their "new simplified billing system" you don't need to be a genius to discover they've stopped mailing you your original bill tickets. When they also announce "a price adjustment" they seem to believe that you will regard a change in their price from $1.00 to $1.15 as a refinement, a fine tuning, and an improvement. But the executives are wrong. Even if this sort of pompous announcement varies the numbers or omits them, the customers know from experience that when a price change is downward, companies use clear terms like "price cut." Pleasant facts are never disguised or sugar-coated.

Iacocca is impressive because he doesn't use terminology that waltzes around the truth. He obviously knows that sometimes the best public relations is just to level with the public. Twenty years ago just as the 1968 presidential fever was starting, the Republicans ran an ad with a picture of President Lyndon B. Johnson captioned, "Would you buy a used car from this man?" Obviously I wouldn't. But I just might buy a used car from Lee Iacocca. At least, my rather sensitive BS detector wouldn't flood and jam after the first three minutes of his sales pitch.

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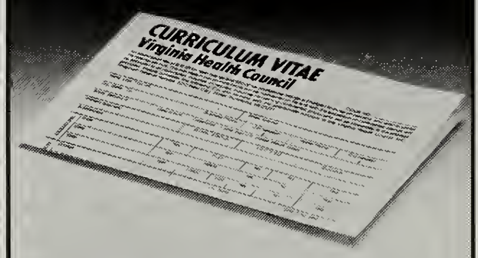
Guest editorials reflect the opinions of the authors and do not necessarily reflect the official position of the Editorial Board or the South Carolina Medical Association.

What Does It Take To Practice In Virginia?



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LETTERS TO THE EDITOR

To The Editor:

I wanted to respond to the article in the February 1987 *Journal* entitled "A New Alternative in Evaluating and Treating Impotence in Men: Direct Injections of the Corpora Cavernosa."

There are several important mistakes and corrections that need to be edited for this particular article. Erectile dysfunction can be treated with Paperavine injections into almost any individual who has had the appropriate diagnostic workup. These could even include paraplegics and quadriplegics. The spouse or partner of the afflicted individual could easily be instructed to give the injections for a quadriplegic.

The article states that use of Yohimbine appears to help between 50 to 75 percent of impotent men treated at their institution where a definite organic etiology cannot be found. These figures are higher than anywhere else published in the urological literature.

The first experience reported with acute erection and by use of exogenous medication was actually reported in 1977 in *World Journal of Surgery* 1:515, 1977. This predates the alleged first report by Verag in 1982.

The recommendations for injection of the medication are closely related to the anatomy of the corpora cavernosa. With its rich vascular anastomosis to the corpora spongiosa, there is only need to inject one cavernosa instead of both cavernosa. Since injection of one cavernosa by the rich supply of anastomotic channels via the corpus spongiosa and crossover channels, there is no need to do bilateral corpora injections.

Another concern was the description of the case of prolonged erections reported in the addendum. The suspicion that Ibuprofen as the causative agent to the prolonged erection is very unlikely in this particular case. As mentioned in the article and in the references cited by the article, one always worries that priapism is one of the major complications of the injection. The addendum case which they described is a typical and classical case of priapism secondary to Paperavine injection.

I think it is very important that the physicians who read this aforementioned article do not attempt without training to provide these alternatives in erectile dysfunction. The use of Paperavine has greatly increased the urologists' armamentarium for erectile dysfunction. However, even those who are familar with the Paperavine injection will note that it is mandatory in today's society, the patient must have informed consent and a thorough understanding of the risks and complications including priapism, infection, and possible vascular disasters.

Steven J. Hulecki, M.D.
169-C Medical Circle
West Columbia, S. C. 29169

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Dr. Hulecki's letter was referred to the author, Dr. Nankin, whose response follows:

We were pleased to learn of Dr. Hulecki's interest in our article describing papaverine/phentolamine injections of the corpora cavernosa in impotent men. We had spoken with several urologic physicians in Columbia prior to initiating our own use of this treatment approach and we knew of only one physician in the area using this treatment and he was using this treatment in one patient. We spoke with several out-of-state physicians using this treatment and followed their experiences over 14 months before beginning treatment here, under a research protocol, passed by a Human Studies Subcommittee, and incorporating a detailed informed consent.

Our experience with these medications continues, but many of our impotent patients now prefer using a vacuum-type apparatus which causes tumescence and this is maintained by a rubber band applied to the penis base when the vacuum cylinder is removed.

To address the comments raised by Dr. Hulecki: (1) Our listed indications for using the intracavernosal injections include men with neurogenic and vascular impotence — this includes paraplegics and quadriplegics (the etiology is almost always neurogenic); (2) As indicated in the original article, we use yohimbine in men in whom a *definite* organic etiology cannot be found. For example, other clinicians may try the medicine in men with neurogenic or vascular impotence. In our experience, using this population of men, 29% did not gain any benefit from yohimbine, while the remainder experienced subjective improvement in potency (71%); of those who improved 15% were also taking intramuscular testosterone (which was not effective alone). These data led us to conclude that 50-75% of our patients benefit from yohimbine; (3) Concerning the first medicine-induced experience of acute erection, the article cited by Dr. Hulecki, 'Arterial epigastricocavernous anastomosis for the treatment of sexual impotence,' by Michal *et al.*, was reviewed, and no comments regarding medicine-induced erections were found. A computerized literature search (June 1987) does not reveal any subsequent manuscript by the lead author describing the use of papaverine or phentolamine (or any other medicine) as treatment for impotence. Virag did make the observation and did begin studies of direct intracavernosal injections[1]; (4) At the time that we initiated this study most clinicians were dividing the medication into simultaneous equal corporal injections. We did note that some clinicians were using one-sided injections. Now, we too have been treating with single injections, alternating sides. For switching patients over to one-sided injections, we begin with about 60% of the total dose previously equally divided and adjust the dosage thereafter; (5) Whether or not ibuprofen was involved in the only episode of medicine-related priapism we have seen is not clear. That drug alters vasoactive prostaglandins; therefore, it was mentioned for completeness. However, some of our patients respond well to our test dose (0.1 ml) and they can be maintained on it or a slightly larger dose; (6) Dr. Hulecki mentions 'papaverine injections' and apparently that is what he uses to treat his impotent patients. We use a combination of the two medications. The dosages and volumes used are different; and (7) We agree that patients fully understand these drugs, the probable mechanisms of action, the possible long-term complications, and the possible side effects. Our patients sign a detailed informed consent (and receive a personal copy).

Thank you for your time and interest.

HOWARD R. NANKIN, M.D.
Professor of Medicine
Director, Division of
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University of South Carolina
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Columbia, S. C. 29208

REFERENCE

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ON THE COVER: THOMAS T. EARLE, M.D., 1845-1921

At age seven Thomas T. Earle, M.D., was an orphan as the result of the untimely death of his parents. At age 15 he was a private in the Confederate Army, and at age 54 he was a much beloved President of the South Carolina Medical Association.

Thomas T. Earle was born in Greenville, May 8, 1845. He was the son and descendent of two families prominent then, as now, in Greenville. His father was the Honorable Elias D. Earle, a member of the South Carolina legislature, and his mother was Miss Susan Haynesworth. Thomas T. Earle was one of seven children. At the death of his parents, Thomas Earle was adopted by his uncle, Colonel Thomas B. Haynesworth of Darlington, and it was there that he spent his younger years.

With the outbreak of the Confederate War, young Earle left school and volunteered as an enlisted man in the Darlington Light Infantry. After 15 months, he rose to the rank of Sergeant Major and was appointed by the Governor of South Carolina to the military college at Charleston. Following the termination of those hostilities, Earle attended Columbia College (now George Washington University) in Washington, D. C. Taking his medical degree in 1870, he removed to Greenville where he established a successful practice specializing in diseases related to females and children. In 1866, Thomas T. Earle was, as many men, nearly broken by the war. He was penniless and left with typhoid fever. However, his hard work and passion for excellence led him through his medical training into a well-respected medical practice and recognition by his peers by his election to the presidency of the South Carolina Medical Association.

He was the 49th president of our organization and in his presidential address his concerns about politics and ethics were reflected. Stating that he knew others of greater capability could have easily been chosen, he observed that with the political election to any office "from that of Coroner to United States Senator depends, as rule, on influence, pull and bribes." He remarked that a once celebrated politician had written: "The cat that is afraid to get his feet wet will catch no fish." He reproved his colleagues by stating we should be thankful that we wish to catch no fish by fraud or trickery, and prefer to remember that "the physician lives in the garden land of humanity, the politician in the marketplace of money." He championed that the medical profession was for healing not for gain stating that gain is but incident, not essential. He noted that we claim a membership of gentlemen who annually attend these meetings with the single purpose of being benefited in order that humanity may reap the rewards.

Strong on a Code of Ethics, Dr. Earle emphasized that "our profession is almost divine in its mission. Having for its object the relief of suffering and the prolongation of human life; what higher mission could any calling have and what professional or code loftier than ours? and is it not due to this code that the medical profession is esteemed and enjoys honorable standing wherever civilization exists?" He felt that every graduate should have a copy of the code with his diploma and that it should be his pleasure as it is his duty to know it by heart. He felt that this simply reflected the golden rule given by Confucius that "what you do not like when done to yourself, do not do to others."

Dr. Earle expired in 1921. His reputation and stature in South Carolina medicine is a worthy example and his code of ethics should frequently be referred to.

— Thomas M. Leland, M.D., Ph.D.

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TWO CASES OF SYDENHAM'S CHOREA: A DISORDER ON THE INCREASE?*

MARK GEORGE, M.D.
REID TAYLOR, M.D.
A. R. SEAY, M.D.
E. L. HOGAN, M.D.

Sydenham's chorea is a dramatic clinical syndrome related to acute rheumatic fever (ARF). It is sometimes mistaken for a psychogenic behavioral disorder. The incidence of Sydenham's chorea and ARF fell drastically during the past 25 years, but appears to be increasing in frequency in some regions of the country.[1] A review of patient records at the Medical University of South Carolina and affiliated hospitals from 1977 through 1986 produced only three patients with Sydenham's chorea. During the first three months of 1987, however, two patients presented with characteristic clinical and laboratory evidence of Sydenham's chorea. This report is to alert physicians in South Carolina and neighboring states to the occurrence of Sydenham's Chorea and to emphasize the need to initiate antibiotic therapy for rheumatic fever in order to prevent carditis.

CASE REPORTS

Patient 1: A 17-year-old black girl complained of left wrist pain and uncontrolled movements of her left arm and leg. Four months previously she had experienced dizziness, dysphagia and fever that resolved spontaneously. Three months before admission she developed a limp attributed to left leg weakness. One month before admission, both ankles were swollen and tender for several days, followed by spontaneous resolution. At this time, involuntary movements of her left arm and leg and slurred speech were observed. Her movements became more vigorous and frequent until she became bedridden, although on several occasions they were so strong she "flopped out of bed."

The family history was negative for neurological disorders. Her five brothers and sisters and seven-month-old daughter were all in good health. Her father had acute rheumatic fever (ARF) as a child. During her pregnancy she had not had any abnormal movements. There was no history of exposure to toxins or drugs.

On phyical exam the patient was alert and oriented. Blood pressure was 100/60 mmHg, heart rate 66 and temperature 99°F. There were no skin rashes or subcutaneous nodules. A 2/6 systolic ejection murmur was heard at the lower left sternal border. Her left wrist was tender but not swollen or warm. The general physical exam was otherwise normal. There was notable emotional lability. Her speech was characterized by improperly accented syllables. At rest she had frequent oral-facial choreic movements including lip-smacking, blowing and darting eyes. There were bilateral, frequent, random, purposeless, jerking movements that were most prominent in her left arm, fingers and leg. While walking, her trunk would flex abnormally to the left. On finger to nose testing she was unable to stop at the target (dysmetria). Cranial nerve functions, muscle strength, sensation and muscle stretch reflexes were normal.

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The results of laboratory investigation included a throat culture positive for group A beta-hemolytic strep, streptozyme titer of 1:200 (normal less than 1:100), anti-streptolysin o titer greater than 1:2720 Todd units (normal less than 1:170), and a Westergren sedimentation rate of 53 mm/hr (normal 10-20). Serum electrolytes, GOT, GPT, alkaline phosphatase, beta-human chorionic gonadotropin, serum copper, ceruloplasmin, T3, T4, T7, anti-nuclear antibody titer and a cranial computerized tomographic scan were all normal. Her electrocardiogram had anterior T-wave inversion but was otherwise normal. An echocardiogram had normal appearing valves with mild mitral regurgitation and aortic insufficiency.

The diagnosis of acute rheumatic fever with carditis, arthritis and Sydenham's chorea was made. The patient was given 1.2 million units benzathine penicillin, prednisone 20 mg four times a day and chlorpromazine 50 mg twice daily.[2, 3] She was placed at bedrest for two weeks. The choreic movements decreased and the sedimentation rate returned to normal after one week of therapy. The plan is for her to continue to receive rheumatic fever prophylaxis until at least age 25.

Patient 2: This nine-year-old white girl was referred to the Medical University of South Carolina for evaluation of "jerky movements." Two months previously "fidgetiness" was noted. One month prior to referral, her mother noticed that she was running abnormally with her left leg bending outward and the patient complained of a painful right knee. Three weeks prior to referral an unusual involuntary jerking of the patient's left upper extremity began. The child's handwriting became "sloppy." She had frequent episodes of unprovoked crying and giggling. The patient's movements had been increasing in frequency and intensity for three weeks before she was evaluated.

The history was negative for sore throat, infections, medications, drug use, head trauma and seizures. The family history was negative for neurological disease. The child's developmental history was normal.

On physical exam she was alert and cooperative. Blood pressure was 80/60 mmHg, heart rate 76 beats per minute, and temperature 98°F. Examination of her throat, chest, heart, skin and skeleton was normal.

The neurological examination demonstrated frequent, bilateral, involuntary jerking movements that were prominent in her upper and lower extremities. Her gait showed slight circumduction of her left leg. Muscle strength was normal, though efforts to sustain contractions with her left arm were interrupted by frequent contractions and relaxations. She was not able to maintain tongue protrusion. Her patellar tendon reflexes had a visible "catch" on return to the resting position. She had impaired movement of finger to nose on the left with frequent clonic jerks out of the intended path. Sensation was normal.

Throat culture was positive for group A beta-hemolytic strep, and an anti-streptolysin 0 titer was greater than 1:1360 Todd units. Serum electrolytes, GOT, GPT, alkaline phosphatase, serum copper, ceruloplasmin, T3, T4, T7, anti-nuclear antibody titer, and Westergren sedimentation rate, and electrocardiogram and cranial computerized tomographic scan were normal. An echocardiagram demonstrated mild mitral regurgitation. The clinical and laboratory findings were characteristic of rheumatic fever with mild carditis and Sydenham's chorea. Initial treatment consisted of chlorpromazine 25 mg at night and 1.2 million units benzathine penicillin intramuscularly each month. During the following month the chlorpromazine dose was increased to 150 mg per day and the choreic movements gradually improved. The patient will continue to receive rheumatic fever prophylaxis until at least age 25.

DISCUSSION

These two patients developed ARF with arthritis, carditis and Sydenham's chorea. Their abnormal movements were the diagnostic feature that prompted further investigation revealing carditis. The carditis is important because it requires prompt treatment to prevent long-term valvular disease with its attendant morbidity and mortality.

Rheumatic fever is a post-streptococcal, systemic, inflammatory process which often involves connective tissue. Its clinical manifestations reflect tissue injury of the joints (rheumatic polyarthritis), nervous system (Sydenham's chorea), and heart (rheumatic carditis) (Table I). Central nervous system involvement (Sydenham's), though clinically striking, is almost always self-limited and requires treatment only if the movements interfere with daily function. However the carditis, if not promptly treated, can lead to progressive mitral valve scarring that results in mitral regurgitation and stenosis.

Sydenham's chorea was first described in the 14th century in Europe and was originally called St. Vitus Dance (the dancing mania).[4] In 1686 Thomas Sydenham separated this type of chorea from other movement disorders.[5] "Chorea" stems from the Greek word for dance and refers to involuntary and arrhythmic movements which are rapid, forcible and quick. Whether simple or elaborate they may resemble a voluntary movement. When superimposed on a voluntary movement they add a grotesque or exaggerated effect. Chorea should be differentiated from athetosis which has relatively slow and sinuous movements and from ballismus which manifests very violent, flinging, rotary movements of a limb.[6] Other common causes of chorea that should be considered in such patients include vasculitis, drug-induced dyskinesias, Huntington's chorea, Wilson's hepatolenticular degeneration, caudate nucleus infarction, hyperthyroidism, hypoparathyroidism and cerebral palsy.

ARF was once common in the U. S., but its incidence steadily declined from 1935-1980 (Table II). It is interesting that the percentage of rheumatic fever patients with chorea declined as well.[7] The decline of ARF has been variously attributed to an improved standard of living and medical care, the advent and widespread use of antimicrobials and the disapearance of certain strains of group A streptococcus that specifically induce immune disorders.

In the past few years there have been several reports indicating a resurgence in the incidence of ARF and Sydenham's chorea.[8] In 1985 the Center for Disease Control noted an eightfold increase from six to 99 cases of acute rheumatic fever in Utah. Thirty percent of these had chorea, which is a higher proportion of chorea than in the past. At the Medical University of South Carolina and Charleston Memorial Hospital there were three recorded cases of acute rheumatic fever and Sydenham's chorea in the decade from 1977-1986. We have now seen two cases in the first three months of 1987.

TABLE I

Revised Jones' Criteria For The Diagnosis of Rheumatic Fever

MAJOR —	CHOREA CARDITIS POLYARTHRITIS ERYTHEMA MARGINATUM SUBCUTANEOUS NODULES	
MINOR —	CLINICAL —	Previous history of rheumatic fever Previous history of rheumatic heart disease Arthralgias, Fever
	LABORATORY —	Elevated erythrocyte sedimentation rate C-reactive protein Leukocytosis Prolonged P-R interval on electrocardiogram
SUPPORTING EVIDENCE —	Increased titer of streptococcal antibodies Positive throat culture Recent Scarlet Fever	

[°] From Stollerman GH, Markowitz M, Taranta A, et al: Jones criteria (revised) for guidance in the diagnosis of rheumatic fever. Circulation 32:664, 1965.

A change in the strain of streptococcus to one with an increased specificity to induce Sydenham's in susceptible persons could underlie the postulated resurgence and the increase at our center. Another possible explanation of the change in incidence is that experienced pediatricians in the past recognized patients with ARF and Sydenham's chorea and did not refer them further.

The mechanism producing chorea following infection with Group A streptococcus is not known. The prevailing theory is that the Group A streptococcus induces autoimmune host responses that cause inflammation and tissue injury of selected organ systems.[9] Another theory is that cytotoxic substances are produced by a Group A streptococcus and deposited in connective tissues.[10] Patients with Sydenham's chorea who die from other causes have no characteristic pathological lesions. Clinically a plausible case exists for dysregulation and increased sensitivity in dopaminergic pathways underlying both the movement disorder and the emotional lability.[11] The good response in our patients to the dopamine antagonist chlorpromazine is consistent with dopamine system dysfunction.

Sydenham's chorea is almost always self-limited with only rare cases persisting beyond six months. Some patients who have had Sydenham's chorea can suffer a recurrence of the chorea in later life, especially during pregnancy or during times of stress (battle combat zones). There are some data suggesting that patients who have had Sydenham's chorea have an increased chance of developing psychiatric disorders.[12, 13] However, the cardiac manifestations are the most severe complication, and the major concern with ARF patients is prophylaxis against new streptococcal infection. We recommend IM administration of 1.2 million units benzathine penicillin every month until at least age 25. The treatment of acute rheumatic carditis includes bedrest but in the opinion of most the value of steroid therapy is controversial.[2, 3]

We present these two cases of ARF with carditis and Sydenham's chorea to remind practitioners in the Southeast that this disease has not vanished and may be increasing. Sydenham's chorea may be the presenting complaint in patients with ARF who need additional investigation and treatment to prevent the long-term sequelae of rheumatic carditis. Practitioners in South Carolina, especially those recently completing training, should be aware of this disease and its protean manifestations. ☐

TABLE II

Incidence of Rheumatic Fever*

	1935-1949	1950-1964	1965-1978	1977-1981	1985
Incidence per 100,000 population per year	65(1)	41(1)	9(1)	1.88(2) 0.50(3)	18(4)

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* Data from South Carolina not routinely recorded.
(1) Rochester, Minn.(14)
(2) Memphis, Tenn.(15)
(3) Baltimore, Md.(16)
(4) Salt Lake City, Utah (1)

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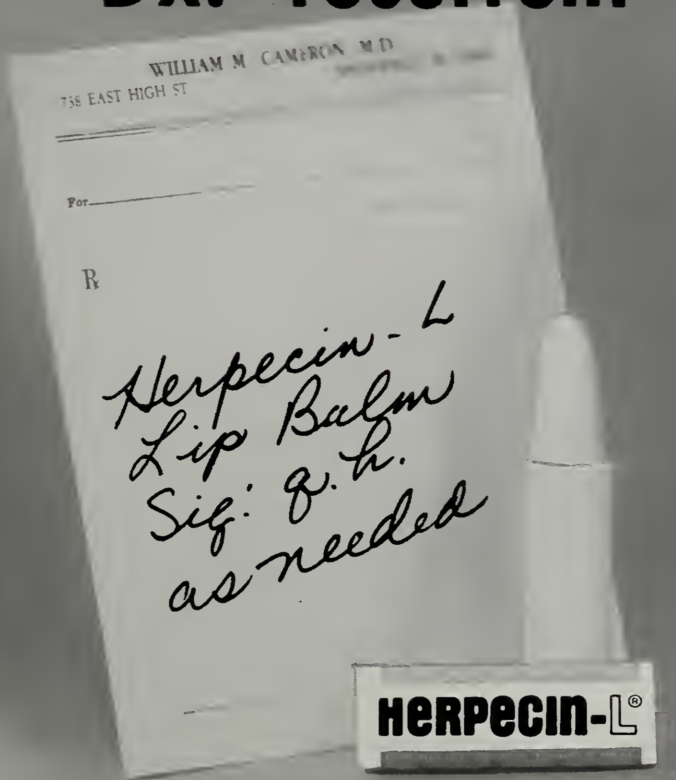
Dx: recurrent herpes labialis



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NEONATAL INTRAVENTRICULAR/ SUBEPENDYMAL HEMORRHAGE: CLINICAL AND RADIOLOGIC IMPLICATIONS

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Neonatal intensive care has improved the outlook for infants <1500 grams birth weight.[1, 2, 3] Although the survival of these infants 15 to 20 years ago was less than 40 percent, today their survival chances are excellent.[4, 5, 6] Eighty-five to 90 percent of infants with birth weights 1000-1500 grams survive.[1] For infants 750-1000 grams, 50 to 60 percent are now surviving.[7] Neurologic sequelae in these small infants ranges from 20 to 50 percent with the smallest infants having the greatest risk.[8, 9]

The etiology of these neurological sequelae is multifactorial.[10, 11] Neonatologists and radiologists have focused on the area of neonatal intracranial hemorrhage as one of the primary factors involved in abnormal neurological outcome. Intraventricular hemorrhage/subependymal hemorrhage (IVH/SEH) is most commonly seen in premature infants. The precise frequency of clinically significant neonatal IVH/SEH is exceedingly difficult to ascertain. As little as five years ago, we did not have bedside ultrasonography that now is used daily in intensive care nurseries to diagnose and classify IVH/SEH.[12, 13] Through ultrasonography, it has been found that infants less than 1000 grams birth weight may have an incidence of IVH/SEH as high as 40 to 60 percent.[14] Those infants 1000-1500 grams will have an incidence of 30 to 50 percent.[14, 15] Some authors have reported an incidence of IVH/SEH of 90 percent in infants less than 34 weeks gestation.[16] Because of this exceedingly high incidence of IVH/SEH in the very low birth weight infants (less than 1500 grams birth weight), most neonatal units will use routine cranial ultrasound to screen all their infants less than 1500 grams several times during their stay in the Neonatal Intensive Care Unit.

Intracranial hemorrhage can be classified into basically three areas:

1. subdural
2. primary subarachnoid
3. intraventricular/subependymal hemorrhage with or without extension into the parenchyma

This review will focus on intraventricular/subependymal hemorrhages as seen from the pathologic, clinical and radiologic viewpoints.

IVH/SEH is the most common severe type of intracranial hemorrhage in the premature neonate and may rarely be seen in term infants.[17] Infants at greatest risk include prematures less than 1500 grams, babies that have had hypoxic ischemic damage, babies on mechanical ventilation, and infants with pneumothoracies.[18, 19] The site of origin of the bleed tends to be in the caudate nucleus in 85 percent, the caudate body in five percent and the choroid plexis in approximately 10 percent (especially in term infants).[21, 22]

The pathologic features of IVH/SEH must explain the strong association with prematurity and hypoxic events as well as the characteristic locus of the lesion. This can be done by understanding that the periventricular topography relates primarily to the venous drainage of the affected areas. The veins of the Galenic system drain the areas of the subependymal germinal matrix, which in the premature is a highly vascular and cellular region. The germinal matrix vessels are provided with very little supporting connective tissue and, thus, become extremely sensitive to hemodynamic changes such as stasis, thrombosis or increased arterial and venous pressure. With any of these problems, this capillary bed is prone to rupture and ultimately leads to intraventricular/subependymal hemorrhages.[15, 22]

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The germinal matrix where most of the bleeds originate is uniquely a fetal structure, involuting by 32-34 weeks and usually absent in the term baby.[22, 23] It is gelatinous with a high water content, has abundant cellular components, is high in metabolic activity and vascularity, has a high fibrinolytic activity, and has a very thin basement membrane.[24] The risk factors for IVH/SEH are listed in Table I. By reviewing this Table, one can see how prematurity and hypoxia can lead to rupture of the vascular structures in the germinal matrix, penetrating either the ventricular space itself or the surrounding brain parenchyma.

It should be noted that factors such as thrombocytopenia, DIC or prolonged bleeding times may be seen in babies with IVH/SEH,[25] however, one should remember that prothrombin time and partial thromboplastin times may be normally prolonged in the premature infant. Nonetheless, studies have shown some association with coagulopathy in IVH/SEH.[25]

Classification of bleeds can be done on both a clinical and ultrasonographic criteria. Table II demonstrates a classification of bleeds based on clinical criteria.[26]

Radiologic diagnosis of IVH/SEH by bedside ultrasound has added significantly to the care of critically ill neonates. By utilizing cranial ultrasound through the anterior fontanelle, coronal and sagittal sections of the head may be obtained that will define the location and the extent of the IVH/SEH. These hemorrhages can be graded radiologically by determining the extent and location of the bleed.[27] The grading system by Papile seen in Table III is often used by neonatologists and radiologists alike when grading IVH/SEH.[28]

Some of the most difficult radiologic diagnoses deal with those bleeds that are located in the choroid plexus. There are various degrees of normal when one views the choroid plexus on ultrasound. Consequently, hemorrhage in the choroid plexus is often over-read. At the Perinatal Intra-

TABLE I

Pathogenesis of Periventricular, Intracerebral Hemorrhage[17]

RISK FACTORS	*BASIS FOR RISK*
Prematurity	Subependymal germinal matrix still present Veins thin-walled, fragile
Hypoxia	Venous congestion Endothelial injury
Periventricular locus	Poor venous support (subependymal germinal matrix) Hemodynamic factors

TABLE II

CLINICALLY THE BLEEDS CAN BE CLASSIFIED INTO THREE TYPES:[26]

1. Silent — these are usually small bleeds that are accompanied by no symptoms or symptoms that are so subtle that one does not discriminate this from normal.
2. Saltatory — these types of bleeds undergo evolution over hours to days. Often this is accompanied by stupor, altered motility, hypotonia, abnormal eye movement and respiratory distress.
3. Catastrophic — this bleed occurs rapidly over minutes to hours and usually leads to abrupt clinical deterioration. There can be coma, stupor, marked respiratory distress, apnea, metabolic acidosis, hypoxemia, seizures, flaccid tone, bulging anterior fontanelle, bradycardia, temperature instability and falling hematocrit. This type of bleed often leads to death within 12 to 24 hours of occurrence. Whereas, recovery is often complete with silent or saltatory bleeds, if the child with the catastrophic bleed survives, there is usually severe, permanent neurological sequelae.

TABLE III

IVH Grade By Ultrasound[28]

Grade I	— This hemorrhage is localized to the germinal matrix or choroid plexus and does not extend into the brain parenchyma or intraventricular cavity.
Grade II	— These bleeds which originate in the germinal matrix or choroid plexus extend into the ventricular cavity filling less than half the ventricular cavity with no obvious ventricular dilatation.
Grade III	— These hemorrhages are much more severe. The bleed now is extended into the ventricular cavity and there is usually significant ventricular dilatation on the initial ultrasound.
Grade IV	— These hemorrhages are those that extend into the brain parenchyma and are usually accompanied by intraventricular hemorrhages as well.

TABLE IV

IVH And Neurodevelopmental Outcome[29]

GRADE	*NORMAL*	*HANDICAP*	*MAJOR HANDICAP*
Control	49%	51%	10%
I	48%	52%	11%
II	50%	50%	9%
III	14%	86%	36%
IV	12%	88%	76%

cranial Hemorrhage Conference in Washington, DC in 1980, various institutions reported the incidence of IVH/SEH in the populations of their NICU's as ranging from 40 to 90 percent, depending upon the radiologist who was interpreting the bleeds.[30] Those units reporting a 90 percent incidence were thought to be over-reading hemorrhages, especially in the area of the choroid plexus.

Further investigation shows that IVH/SEH is a major contributor to later neurodevelopmental outcome. Using the same system of Papile, Table IV shows one study relating grade of hemorrhage to later handicaps.[29] Prognosis for infants with Grade III and IV hemorrhages is significantly worse than for those infants who had Grade I or II hemorrhages.

Because there have been no harmful effects known with ultrasound at energy levels and frequencies used by real time scanning, frequent cranial ultrasounds can be performed on critically ill infants.[31] It is recommended that the initial cranial ultrasound be done after the first 72 hours of age since 80 to 90 percent of the bleeds will occur during the first three to four days of life.[32] Ten to 20 percent of the babies will have either primary bleeds or extension of the original bleed from days three to ten, and therefore, a follow-up cranial ultrasound should be done at approximately 14 days of age on all these infants.[32] Depending on the initial findings, future ultrasounds may be done every one to three weeks as required.

Once IVH/SEH has occurred, one should carefully follow these infants for posthemorrhagic hydrocephalus. Posthemorrhagic hydrocephalus is characteristically seen with some Grade III and most Grade IV bleeds. Recent studies suggest that some babies with Grade I and Grade II hemorrhages may have initial ventricular dilatation, but this usually spontaneously resolves and does not result in abnormal growth of head size or require any therapeutic intervention.[33] Table V outlines the incidence of posthemorrhagic hydrocephalus as reported by Papile's group related to grade of intraventricular hemorrhage.[34]

Posthemorrhagic hydrocephalus can be diagnosed radiologically by the second week of life.

TABLE V

Incidence of Posthemorrhagic Hydrocephalus[34]

GRADE IVH	*PERCENTAGE*
I	NONE
II	NONE
III	40%
IV	70%

TABLE VI

IVH and Hydrocephalus: Neurodevelopmental Outcome[37]

	Multiple Handicaps
Grade III	17%
III + HC	38%
Grade IV	38%
IV + HC	78%

Clinical signs of hydrocephalus may not occur until two to three weeks of age. With ultrasound, one sees dilatation of the ventricular system, often with a disproportionate dilatation in the occipital horns. If the bleed has been relegated primarily to a single side of the head, then this ventricular system may be disproportionately dilated compared to the other. The cause of ventricular dilatation is thought to be secondary to both obstruction at the level of the third ventricle or aqueducts or an injury to the absorption mechanism of the cerebral spinal fluid over the coverings of the brain.[26, 34]

As previously shown, infants that suffer IVH/SEH are at risk for having neurodevelopmental handicaps later in life. The presence of hydrocephalus also influences outcome (Table VI). The risk of handicaps is significantly greater in those infants that have Grade III or IV intraventricular hemorrhage with hydrocephalus.

The radiologist can be of valuable assistance to the neonatologist in following babies with posthemorrhagic hydrocephalus. If one takes coronal sections through the third ventricle and measures ventricular size and relates this to hemispheric size, then the ventricular/hemispheric ratio can be obtained. This will give guidance to the clinician as to whether or not the hydrocephalus is static, increasing or decreasing. If posthemorrhagic hydrocephalus continues to progress, then a ventriculo-peritoneal shunt is usually indicated for permanent resolution of the problem.[35, 36]

At 20 to 30 months of age, infants whose V/H ratio was >0.37 in the neonatal period fared poorly when compared to infants with no bleed or infants with a bleed and minimal ventricular dilatation. Table VII shows developmental outcome of these groups. There was a significantly higher number of children classified as abnormal in Group 3 as compared to Group 1 or 2.[37]

TABLE VII

Development[°] of Preterm Infants at Age 20 to 30 Months[37]

	Group 1 (n=21)		Group 2 (n=22)		Group 3 (n=10)	
Development[°°]	n	%	n	%	n	%
Normal	15	71	16	72	1	10
Suspect[+]	4	19	3	14	4	40
Abnormal[‡]	2	10	3	14	5	50
Cerebral palsy	—		—		4	

[°] Bayley Scales and neurological examination.

[°°] Chi-square = 13.046; P = 0.01, df = 4.

[+] Bayley Scale scores (MDI or PDI) between 68 and 83.

[‡] Bayley Scale scores (MDI or PDI) < 68, or cerebral palsy, or both.

Group 1 — No Intracranial hemorrhage.
Group 2 — Intracranial hemorrhage without significant ventricular dilation.
Group 3 — Intracranial hemorrhage with V/H ratio > 0.37.

Ultimately, as the etiology of IVH/SEH in the neonate becomes better understood, we will be able to prevent these entities. Until that time, the combined efforts of the neonatologist and radiologist can lead us to early diagnosis and treatment of these babies. □

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BENIGN ESOPHAGOBRONCHIAL FISTULA — REPORT OF A CASE AND REVIEW OF THE LITERATURE

CAROLYN E. REED, M.D.

Acquired benign esophagobronchial fistulas are not common. If not identified, they can lead to considerable morbidity and even mortality. Since surgical treatment is highly successful, internists, general practitioners, surgeons and pediatricians should know when this entity is a consideration in the differential diagnosis.

A recent case at the Charleston V.A. Hospital prompted a review of the subject.

CASE REPORT

Mr. R. L. is a 56-year-old white male who presented to the VA OPD on 10/9/85 with a four-day history of hematemesis and right pleuritic chest pain. He denied fever, chills, or night sweats. Physical exam was unremarkable as was lab data. CXR showed a questionable right pleural effusion. A PPD was positive but serial sputums were negative for AFB. No further hemoptysis occurred. Bronchoscopy on 10/11/85 showed edema, erythema and scarring of the RML orifice with an obstructing gray mass thought consistent with tumor or foreign body. Biopsy revealed only chronic inflammation.

Of significance in the patient's past medical history was a right thoracotomy performed in 1979 in Savannah, GA, for a right hilar mass felt suspicious for carcinoma. Preop bronchoscopy had revealed a stenotic right middle lobe bronchus. At surgery only reactive hilar lymph nodes were found containing noncaseating granulomas.

On 1/15/87, the patient again presented to the OPD with a one-year history of increasing SOB, cough, right pleuritic chest pain, nocturnal wheezing and odynophagia. Intake of liquids resulted in coughing. An UGI on 2/26/87 revealed an esophagobronchial fistula connecting the mid esophagus to the superior segmental bronchus of the RLL (Fig. 1). Pulmonary function tests showed mild obstructive lung disease. Both flexible esophagoscopy and bronchoscopy failed to localize the fistula. A CT scan of the chest showed increased soft tissue in the right hilum. On 3/27/87 the patient underwent right thoracotomy, and a fistula was identified from the mid esophagus to the bronchus intermedius (Fig. 2). A calcified lymph node was resected and appeared to be the etiologic agent. The fistula was divided using a stapler and a pleural flap placed between the staple lines. Postop the patient noted resolution of cough, nocturnal wheezing, and odynophagia. A repeat barium swallow was normal. Path revealed a lymph node partially replaced by calcified granulomas.

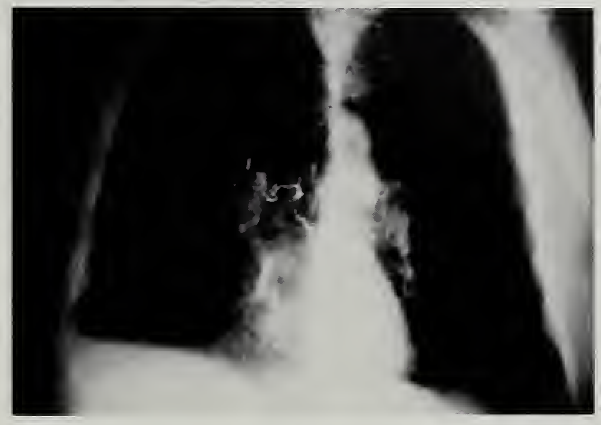

FIGURE 1. Barium esophagram outlines a bronchus secondary to a fistula.

REVIEW OF LITERATURE

Most fistulas between the esophagus and tracheobronchial tree are secondary to malignant disease of the esophagus, trachea or bronchus, mediastinum, or thyroid. Benign acquired esophagobronchial fistulas are less common. The majority of these fistulas are caused by infection or trauma. The various etiologic agents are summarized in Table I. Congenital fistulas have been reported and have been presumed on the basis of histologic verification of a squamous mucosa,

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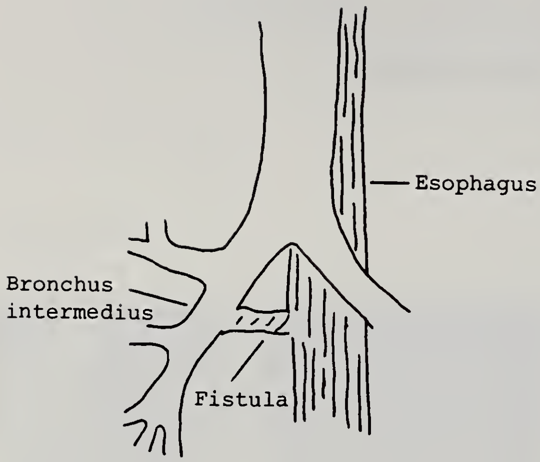

FIGURE 2. Diagram of findings at surgery.

TABLE I

Etiology of Acquired Benign Esophagobronchial Fistulas

Infection
- Tuberculosis
- Histoplasmosis
- Actinomycosis
- Syphylis

Trauma
- Compression injury
- Penetrating injury
- Aspiration of foreign body
- Lye ingestion

mucosa, and the absence of neoplastic or inflammatory changes. Congenital fistulas have been divided into four types based on whether they are associated with an esophageal diverticulum, bronchogenic cyst, or sequestered pulmonary segment.[1, 2]

Inflammatory esophagobronchial fistulas are most commonly due to tuberculosis, but other etiologic agents include histoplasmosis, actinomycosis, and syphilis,[3, 4] In many recent cases, such as ours, the organism has not been identified because the initiating disease is inactive. Histoplasmosis is a frequent example.

Inflammation from granulomatous diseases causes enlargement, caseation, and necrosis of mediastinal and hilar lymph nodes. These abscessed nodes erode and can eventually rupture into the esophagus and tracheobronchial tree. Healing of granulomatous disease leads to calcification of lymph nodes and they can secondarily erode into the esophagus, trachea, or bronchi and produce a fistula. This is probably the mechanism of fistulization in our reported case. Granulomatous inflammation occasionally leads to the development of a traction diverticulum, and such diverticula may rupture into the tracheobronchial tree when secondarily infected or eroded by calcified lymph nodes.

About one-third of benign acquired esophagobronchial fistulas are caused by trauma. Blunt chest trauma, such as a steering wheel injury, might be expected to produce a fistula by mechanisms similar to those implicated in tracheal rupture alone.[5] Compression of the trachea against the vertebral column caused by an anterior blow to the chest wall may result in tearing of the membranous portion from its cartilaginous attachments. Concurrent damage to the anterior portion of the esophagus predisposes to development of a fistula.

Symptoms of an esophagobronchial fistula are summarized in Table II. The cardinal symptom is paroxysmal cough on ingestion of liquids. However, respiratory symptoms can be very nonspecific and result in a delay in diagnosis. The fistula may result in pulmonary infection with pneumonia, bronchiectasis, or abscess.

TABLE II

Symptoms of Acquired Benign Esophagobronchial Fistula

Respiratory
- Cough
- Choking sensation
- Hemoptysis
- Dyspnea
- Wheezing

Gastrointestinal
- Dysphagia
- Vomiting
- Hematemesis

Miscellaneous
- Weight loss
- Pain
- Hoarseness

The best diagnostic study is a Barium swallow using fluoroscopy. Esophagoscopy is usually not helpful because the orifice of the fistula is hidden by mucosal folds. Bronchoscopy is more successful at localizing the fistula and specimens can be obtained for microbiology and pathology. Occasionally the fistula can be demonstrated during a bronchoscopy while injecting methylene blue into the esophagus at the approximate location of the fistula.

Spontaneous closure of an esophagobronchial fistula cannot be expected to occur as the passage of food and saliva tends to keep the tract infected and patent. The treatment of choice is fistula division with resection of irreversibly diseased lung tissue.[3] Adjacent mediastinal nodes and necrotic tissue are excised. Exogenous tissue such as a pleural flap, muscle flap, or pericardial flap should be placed between the bronchus and esophagus. As in our case, surgical intervention cures the problem and results in immediate relief of symptoms. □

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FOR BETTER OR WORSE . . . AS OUR PATIENTS SEE US*

B. DANIEL PAYSINGER, M.D.**

Last October at the South Carolina State Fair, The Columbia Medical Society manned a booth in an effort to better public relations for physicians in the Midlands. A questionnaire given to the public contained certain questions that could be answered easily and provided space for comment (Table I). Answers were received from persons all over the state, from the mountains to the coast. Most respondents were, however, from the Midlands. About 1,600 questionnaires were answered, and of the ones which were returned, the physicians did very well. Patients seemed to like their personal physicians. Of those who returned the questionnaire, 1,380 were satisfied with their physicians and only 173 were not. This breaks down to 87.5 percent who felt that we were doing a satisfactory job and 12.5 percent who were unsatisfied.

Approximately 89 percent of respondents had confidence in their physicians and 86 percent felt they could reach their physicians when needed in an emergency. Only 10 percent of the patients felt that physicians did not listen to them, and only nine percent felt that physicians did not answer questions. Another 25 percent of the patients did not feel that their phone calls were returned promptly and another 22 percent felt that doctors' fees were unreasonable. This last figure was surprisingly low. Slightly over 88 percent of the patients gave us a rating of good or excellent, and 11.8 percent gave us a fair to poor rating.

When compared to an AMA survey done by an outside research firm, interviewing 20,000 patients in 50 states, the South Carolina physicians seemed to fare somewhat better (Table II).

In 1985, according to the AMA survey, only 32 percent felt that doctor's fees were reasonable and 64 percent felt that doctors were too interested in money. However, in that survey, 74 percent felt that the doctors were interested in their patients. Overall, however, the percentages shown in Table II compare unfavorably to those in the Columbia Medical Society Survey.

The questionnaires were divided into two groups: one for the patients who were satisfied and the other for the patients who were unsatisfied. As one would expect, the comments were varied and too numerous to really have them all recorded.

Of the patients who were satisfied, there were two major complaints or areas in which the patients felt that physicians should improve. The first had to do with the length of time that the patient had to wait. They felt that the time spent waiting to see a physician was too long and that the physician should schedule appointments in some way to keep the patient from waiting unduly long periods of time. They understood that emergencies could arise, but felt that, in general, the wait to see a physician after arriving in his office was too long.

The second area in which the patients who were satisfied complained had to do with office personnel. Comments varied from the fact that the office personnel were rude, unfeeling, impersonal, to office personnel trying to practice medicine.

There were other lesser complaints which had to do with finances, personalities, and so forth, but these were the two big areas the satisfied group were unhappy with.

In the dissatisfied group of patients, comments again were varied and the harshest was one patient who felt that his physician should be jailed. Again, there were two big categories about which the dissatisfied patient complained. The first was related to the length of time the patient had to wait in the physician's office. Comments were somewhat harsher and more critical than those of the satisfied patients, but generally were along the same lines.

The second complaint in this group also had to deal with rude, insensitive office help. Again, comments in some cases were very critical, but along the same lines as those of the satisfied patient.

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[*] This study is based on a survey conducted by the Columbia Medical Society of Richland County at the South Carolina State Fair in October, 1986.

[**] 1333 Taylor Street, Columbia, S. C. 29201.

TABLE I

HOW DO YOU RATE YOUR DOCTOR?

	Yes	*No*	*% No*
Are you satisfied with your doctor?	1,380	173	12.5%
Does your doctor listen to you?	1,407	146	10.0%
Does your doctor answer your questions?	1,419	134	9.0%
Are your phone calls returned promptly?	1,250	301	24.0%
Can you reach your doctor in an emergency?	1,357	195	14.0%
Do you have confidence in your doctor?	1,402	151	10.7%
Are your doctor's fees reasonable?	1,274	278	22.0%
How do you rate your doctor?			

EXCELLENT 1,021	GOOD 350	FAIR 109	POOR 73
65.7%	22.5%	7%	4.75

TOTAL = 1,553

Do you have any suggestions for doctors to improve the care they give you?

TABLE II

AMA SURVEY RESULTS

Public attitudes toward the image of physicians were investigated in a poll taken in the summer of 1985 and in earlier polls commissioned by the AMA and conducted by outside research firms. The 1985 survey consisted of 400 telephone interviews with adult residents in each of the 50 states resulting in a total of 20,000 interviews. Some highlights from this survey and corresponding data from previous years' surveys follow:

National Survey Results

	1982	*1983*	*1984*	*1985*
		% Agree		
Doctors are accessible	°	56	53	60
Fees are reasonable	42	32	27	32
People are losing faith in doctors	62	66	68	64
Doctors explain things well	55	49	44	50
Doctors are too interested in money	60	66	68	64
Doctors are interested in patients	68	62	62	74
Doctors are involved in the community	°	°	°	49
Become doctors to help people	°	°	51	65
Become doctors for money/prestige	°	°	66	61
Spend enough time with their patients	46	38	34	41

° data unavailable

It seems strange that the satisfied and dissatisfied patient both had essentially the same complaints, and that the large majority of complaints had to do with the same two situations. This is a very interesting observation and physicians should pay attention to this and make an effort to remedy this situation and perhaps improve patient relations.

Physician fees were commented on in both groups, but much less so than waiting time and rude office personnel. It was surprising that doctors' fees were not higher on the list of written complaints. Perhaps this is because a lot of physicians fees are paid through third parties and the patient does not feel this burden, or patients just do not feel that fees are excessive.

It would be interesting to see a state-wide survey, but we have a fairly good representative survey this time. It appears as though physicians in South Carolina are doing a good job and are respected by their patients. It also appears that there are two areas in which we are somewhat deficient. Without too much effort, these two areas could improve and further enhance our rapport with our patients. The patient/doctor relationship is very important at this time with the changing attitudes about medicine, the medical/legal crisis, and the advent of HMO's, PPO's, and walk-in clinics. We are apparently in good shape now, but we should make every effort to continue to improve our relationship with our patients. ☐

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Editorials

POINT-COUNTERPOINT: SHOULD PREMARITAL TESTING FOR HIV ANTIBODIES BE MADE MANDATORY?

Perhaps the most animated debate at this year's annual meeting concerned the issue discussed in the following two editorials. Guest editorials reflect the opinions of the authors and do not necessarily reflect the views of the Editorial Board and the South Carolina Medical Association.

— CSB

YES!

The gun is loaded. The hammer is cocked. We are about to see a horrifying and lethal disease literally explode into our ranks. Since AIDS was first described in June, 1981, it has been responsible for over 20,000 deaths in the United States alone and its incidence is doubling every 12 to 14 months. Conservative estimates project the sobering news that by 1991, *179,000* will have died, with 91,000 dying in 1991 alone. Every AIDS victim diagnosed in 1982 and 1983 is now *dead* and in the next several months those of 1984 will be dead — there are *no exceptions*. As physicians, we have been entrusted by the lay public with making decisions which are of benefit to, and serve to protect them, from the adverse impact of diseases and from the ultimate impact, that of death itself from the disease. Those in our ranks who serve in the medical subsegment of public health must, of necessity, make and shape our policies as they impact upon the health of the general population.

In making these policy decisions, we have to deal with the victim of disease with as much compassion and understanding as possible and, at the same time, ensure that we are in turn protecting the vast pool of the uninvolved population. As Dr. James Mason of the Centers for Disease Control (CDC) has said, "Our first responsibility is to the many rather than the few." This has always been one of the hallmarks of public health and could be described as "the public health catastrophic law" in that we help the healthiest first.

There are some obvious political, as well as economic, reasons, in many instances, for what I perceive as a "head-in-the-sand" approach when dealing with AIDS. For example, a person involved in the penal system addressed a civic group recently and said that he felt it might be counterproductive to test all prisoners for the HIV virus since this might lead to demands for isolation of all those who tested positive. He stated there was no way to sequester these people in a detention system already straining at the seams. Politically, the gay activists, although representing only eight percent of the subculture classified as "serious" homosexuals in our nation and only 25 to 50 percent of these being exclusively homosexual males and females, have had a disproportionate amount of influence on our national policy (and even in the debate preceding this policy). They even initially had the name of the disease changed from GRID, (Gay Related Immune Deficiency), to the current name "AIDS" to avoid a "stigmatization." This happened despite the fact that in 1982 homosexuals accounted for over 80 percent of reported cases of AIDS. They lobbied successfully at a conference at the CDC in the spring of 1987 to prevent guidelines for mandatory premarital testing to be part of our policy with this disease process. The rights and well-being of the general population do not seem to be considered.

It is my opinion, and that of many others, that we mandate premarital testing for the HIV antibody. As Dr. Nora Bell stated in an article in *The Journal of the South Carolina Medical Association:*

> "Inasmuch as the seeking of a marriage license signals an intent to maintain a monogamous sexual relationship and inasmuch as

> one of the goals of such heterosexual relationships often is child bearing, it seems a natural junction in one's chronology for being tested. A potential innocent third party stands at risk of being harmed. To conceive without electing known safeguards for fetal health seems reproductive and moral irresponsibility. Furthermore, there is a legal and moral warrant for the claim that states have an obligation to protect those unable to protect themselves."

She also mentioned that with positive testing for other STD's (Sexually Transmitted Diseases) therapeutic intervention is available even after conception that would benefit both the mother and fetus, but if the HIV is detected in utero, the only "therapeutic" intervention available is abortion (which is a dismal event for the fetus/baby). Also, since 93 percent of those with AIDS are men, and every woman should have the right to have the state certify that her prospective husband is just as free from the HIV virus as from other STD's this becomes a Women's Rights issue.

Is there a precedent for such statist "interference" in a private, intimate relationship between two people? Should a known HIV carrier have a *right* to marry? In our society, laws of consanguinity forbid the marriage/sexual acts of first cousins. This is not for the safety of the involved couple, but rather to protect the safety and health of any offspring. With AIDS, there is a *grave* prognosis for both the "clean" partner and the resultant offspring.

Obviously, society must have an interest in the bearing and nurturing of children if there is to be a future for that society. The basic fabric of our society is the *family*, even though its flag is tattered and torn from the many fragmenting devices which have been impacting upon it in our generation. Even more vital in this relationship is the fact that marriage brings together two people in an intimate and fulfilling relationship that could prove *lethal* for a partner of a person infected with the HIV virus. All talk of "safe sex" should be abandoned, since it is only a relative term and might possibly be changed to "safer sex," in that all latex protection devices, etc., carry with them a predicted failure rate of five to 10 percent depending on which study is cited. For a single sex episode, the odds may be in your favor, but a woman in a monogamous active relationship is so often exposed to the possible failure of such devices that she, in fact, is playing a game of Russian Roulette each time she engages in the marital act. Society owes it to her to assure her that she is not exposing herself to the HIV virus.

Issues of confidentiality, etc., become moot in this marital relationship, for the onset of ARC (AIDS Related Complex) and full-blown AIDS soon make it impossible to remain undetected. It is not really a matter of should we mandate premarital HIV testing, it is rather a matter of when — this year or next. Since January 1, 1987, over 360 pieces of AIDS related legislation have been introduced into state legislatures. Premarital testing for the HIV virus leads the list with *62 bills* introduced in *30 states*. The state of Pennsylvania already has enacted such legislation and the matter is handled strictly between the two partners involved. Pennsylvania law does not preclude their marriage, but likewise does not encourage it. Also, mandatory testing for the HIV virus is already being done in the armed forces.

Representative William Dannemeyer of California has introduced Federal legislation including H. Con. Res. 8 which urges states to pass laws requiring blood testing for doctors, nurses, and couples before marriage, plus other anti-AIDS measures. These proposals are currently bottled up in the subcommittee on Health and the Environment chaired by Representative Henry Waxman, (D-CA), who with the help of several other colleagues, such as Representative Ted Weiss, (D-NY), are completely stonewalling the issue. [It is of interest that these two gentlemen represent the cities of New York (Manhattan), San Francisco, and Los Angeles, which have produced 60 percent of the cases of AIDS reported in the United States.]

Some have said that such proposals as mandatory premarital testing, hospital preadmission testing, etc., show that we are caught up in a syndrome much worse than AIDS — a syndrome called FRAIDS (Fear of AIDS). In dealing with the disease, my considered opinion is that the fear should be real and it is not to be underestimated. Healthy fear is a sign of good thinking and not a sign of ignorance. It is a natural defense which protects one from harm. Recently, in a large zoo, three boys aged 11 and 12 decided to go swimming in a pool inside a polar bear enclosure. None of the three had FOPB (Fear of Polar Bears). I am sure that as the bears caught, gnawed, and tore one of these small boys limb from limb, they were thinking to themselves, "Oh foolish boy — not to have had FOPB." I am afraid that unless we truly do acquire a strong case of "FRAIDS," we will be both participators and spectators in the most devastating plague since the vast Bubonic Plague of Europe centuries ago. Let us assert ourselves, regain the confidence of a population beginning to realize the implication of this dread disease, and move decisively to protect those who have not yet been exposed to this plague.

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NO!

The rapid increase in the number of AIDS cases, the estimates of a large number of asymptomatic HIV-positive people, and the observed increase in heterosexual transmission all give a strong impetus to "do something" to contain the situation. The urge is understandable. Any action that would control AIDS would indeed be laudable and welcome.

However, faced with any specific public policy proposal, we have a duty to ask: Is the proposal reasonable? Is there a basis for believing that the policy would help alleviate some aspect of the problem? Faced with the proposal for mandated premarital testing for HIV-antibodies (MPT), based on current information I consider the answers to be "No."

Mandated premarital testing for containment of a disease would be effective policy IF preventing marriage of carriers prevented transmission of the disease (or afforded means of treatment), AND IF the population at greatest risk for marriage were the population at greatest risk for the disease. Under those conditions, the degree of coercion involved would be justified in the public interest by the effectiveness of the procedure.

However, AIDS does not meet those criteria. Therefore, we deal here, not with the mandatory nature of the proposal, but with the questions of effectiveness. Why test this particular group?

Is the purpose to contain transmission of the untreatable disease? Most AIDS transmission takes place outside marriage, and would not be affected by rules regarding marriage. Saying no to marriage does not say no to sex, and thus cannot say no to AIDS.

Is the purpose then to prevent infection of innocent newborns? Undoubtedly, a large percentage of newborn AIDS patients are born from conceptions occurring outside marriage. Some may be born to parents who became sero-positive after marriage. Some may be born within marriage from conceptions occurring before marriage. The proposal offers no protection in such circumstances, and leaves hanging some tangled questions. For example, should a marriage license be denied when the marriage would legitimize the pregnancy of a sero-positive woman?

If adopted, would the policy have detrimental effects beyond the wasteful expenditure of funds and hope on an ineffective procedure? It would necessarily extend the waiting period for a marriage license up to two weeks to accommodate confirmatory Western Blot testing of ELISA test positives. In view of anticipated administrative workloads, the waiting period would effectively be perhaps a month. That itself would tend to drive some applicants, probably those most at risk, across state lines rather than wait.

If only one case of AIDS could be prevented, would it not all be worth it? Not if more cases could otherwise be prevented by more rational and effective measures. The low incidence of HIV-positive tests among voluntary unpaid blood donors[1] and the generally low risk in our state[2] predict a low incidence of positives among marriage license applicants.

One thus predicts that the number of cases saved is probably less than the number of false negatives[3] of the available screening HIV test. MPT should be rejected if only on the grounds that it would miss more cases than it would identify. There would be no net benefit.

A more reasonable policy for AIDS containment would be a widespread, non-categorical, totally voluntary testing program such as I have advocated elsewhere.[4]

Finally, a word of caution. In considering HIV testing policy, we must maintain a careful distinction between (1) public policy, (2) local hospital policy, and (3) indications for HIV testing in individual medical practice. Our hospital and medical practice policies must remain flexible and responsive to the rapidly changing AIDS-information environment.

Therefore we must be cautious in proposing legislative mandates, lest a growing legislative enthusiasm to "do something" restrict our ability to react rapidly on behalf of our patients, and on behalf of society, during this most serious challenge yet to public health policy.

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IN MEMORIAM

Marshall J. Coleman, M.D., a Darlington physician, died on June 29, 1987. Dr. Coleman was a graduate of the Medical College of South Carolina in Charleston. He was an Honorary member of the SCMA.

Harvey M. McLure, a retired physician from Bishopville, died on July 8, 1987.

Thomas Parker, M.D., a retired physician from Greenville, died on July 9, 1987. Dr. Parker was a graduate of the University of the South and the University of Pennsylvania Medical School. He was an active member of the SCMA.

Gustave Patrick Richards, M.D., a retired physician from Charleston, died on July 15, 1987. Dr. Richards was a graduate of the College of Charleston and the Medical University of South Carolina. He was an Honorary member of the SCMA.

Hans J. Heller, M.D., a Family Physician from Charleston died on July 15, 1987. Dr. Heller was a graduate of the University of Innsbrook, Austria, and the University of Siena, Italy. He was an Honorary member of the SCMA.

James H. Blair, Jr., M.D., an OB/GYN from Columbia, died on August 14, 1987. Dr. Blair was a graduate of Duke University and the University of North Carolina Medical School. He was an active member of the SCMA.

Those wishing to make Memorials in honor of their deceased colleagues may do so by sending contributions to the S. C. Institute of Medical Education and Research, P. O. Box 11188, Columbia, S. C. 29211.

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ONCOGENES AND THEIR CLINICAL RELEVANCE*

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WILLIAM F. SCHMIDT, M.D., Ph.D.**

In recent years, much research has been directed at discovering a genetic basis for cancer. The hope has been, of course, that the information obtained from a study of the molecular events involved in tumor formation could eventually be brought to the bedside and applied to the actual care of cancer patients.

Compelling evidence now shows that damage to normal DNA is at the heart of tumorigenesis. Cellular genes called "proto-oncogenes" control normal cellular proliferation. Once these genes (or their gene products) become altered to permit uncontrolled cellular proliferation, they are referred to as "oncogenes." Many recent studies have focused on elucidating the functions of the proto-oncogenes and on identifying the molecular events that cause a normal proto-oncogene to convert to an oncogene. This research is beginning to pay dividends in the clinical arena. Already it is possible in some instances to predict the severity and metastatic potential of certain tumors from an analysis of oncogene activity within those tumors. In the future, an understanding of oncogene function might also help screen potential cancer patients, improve tumor classification and develop new modes of cancer chemotherapy.

HISTORICAL PERSPECTIVE

The association between gene function and cancer has been appreciated since the first virus capable of causing tumors in animals was isolated 70 years ago. That virus, the Rous sarcoma virus, causes fibrosarcomas in chickens. It is genetically simple, carrying information from only four genes. Three of these genes are necessary for the life cycle of the virus. The fourth, the *src* gene (for sarcoma-forming), which is necessary for the tumor-promoting properties of the virus, was the first known viral oncogene.[1]

Interestingly, the *src* gene found in the Rous sarcoma virus is not a viral gene at all, but a variant of a normal gene present in the genome of the chicken.[2] The presence of genetic material from the chicken in the genome of the virus can be explained by the peculiarity of the virus itself. This virus belongs to the group of so called "retroviruses" which contain genetic material in the form of RNA instead of DNA. Retroviruses are able to pick up RNA from other cells and incorporate it into their own genomes. Following infection of the host by the virus, the viral RNA is transcribed into DNA (by a process called reverse transcription) and then integrated back into the host's genome at points where it is no longer subject to normal control mechanisms. By this process, called "transduction," retroviruses are able to pick up genetic information from one host, alter it, and infect other hosts with it.

Since the first description of the *src* gene, more than 30 other oncogenes have been shown to be

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integrated into the genomes of retroviruses. In addition to these, oncogenes have been identified that have not yet been associated with specific viruses. In all, more than 40 oncogenes have now been described. Some of these are listed in the Table I, along with the material in which the oncogenes were first discovered and the proposed site of action for their encoded proteins. It is now clear that certain genetic equivalents of many oncogenes are also present in all normal, noncancerous cells. Because they can be converted into oncogenes, these genetic equivalents are called proto-oncogenes.

ONCOGENE CLASSIFICATION AND FUNCTION

At the present time, oncogenes are grouped according to whether their gene products act primarily at the level of the nucleus or at the levels of the cytoplasm and the cell membrane. All oncogenes whose corresponding proteins are found primarily in the nucleus seem to have similar functions in that they have the ability to immortalize cells. That is, they can convert cells possessing limited replication potential *in vitro* into cells capable of indefinite growth. One important member of this group is the *myc* oncogene which has been identified in many human tumors. The precise function of the *myc* oncogene is unknown, but recent studies using antibodies to the *myc* gene product suggest that *myc* encodes a protein that is functionally involved in DNA synthesis.[4]

The second and larger group consists of oncogenes whose RNA products are found in the

TABLE I

CELLULAR ONCOGENES°

ONCOGENE	*ORIGIN*	*SUBCELLULAR LOCALIZATION OF ENCODED PROTEIN*
Retrovirus-associated oncogenes:		
src	Rous Sarcoma Virus	Plasma Membrane
yes	Y73 sarcoma virus	
fes	Fujinami sarcoma virus	Cytoplasm
abl	Ableson murine leukemia virus	Plasma membrane
ros	UR II avian sarcoma virus	Cytoplasmic membranes
fgr	Gardner-Rasheed feline sarcoma virus	
erbA	Avian erythroblastosis virus	Plasma membrane
erbB	Avian erythroblastosis virus	
fms	McDonough feline sarcoma virus	Cytoplasm
mos	Moloney murine sarcoma virus	Cytoplasm
raf	3611 Murine sarcoma virus	
H-*ras*	Harvey murine sarcoma virus	Plasma membrane
K-*ras*	Kirstem murine sarcoma virus	Plasma membrane
myc	Avian MC29 myelocytomatosis virus	Nuclear matrix
myb	Avian myeloblastosis virus	Nuclear matrix
fos	FBJ osteosarcoma virus	Nucleus
ski	Avian SKV770 virus	
rel	Reticuloendothelial virus	
sis	Simian sarcoma virus	Cytoplasm
Related oncogenes known from sequence hybridization or transfection		
N-*myc*	Neuroblastomas	
N-*ras*	Neuroblastoma, leukemias, sarcomas	
Unrelated oncogenes known only from transfection		
Blym	Bursal lymphomas	
mam	Mammary carcinomas	
neu	Neuro-, glioblastomas	

° modified from Reference 3.

cytoplasm and cell membrane. These oncogenes confer anchorage-independent growth upon cells, *in vitro* — a trait not present in normal, noncancerous cells. Perhaps the most intensely studied members of this group of oncogenes are the *ras* genes (H-*ras*, K-*ras*, N-*ras*). Proteins encoded by *ras* bind to and hydrolyze guanosine triphosphate (GTP), and seem to be involved in signal transmission from the cell membrane. Mutations that convert *ras* proto-oncogenes into oncogenes encode for proteins that have lost their ability to hydrolyze GTP. It appears that some change in signal transmission results from this loss, but the precise mechanisms and effects are still unclear. Other oncogenes of this group encode for either growth factors or growth factor receptors. Cells that can manufacture their own growth factors or growth factor receptors are able to bypass important control points for cell proliferation. Examples include the oncogene *sis* which encodes the beta chain of platelet-derived growth factor (PDGF),[5, 6] the oncogene *fms* which encodes a protein closely related to the macrophage colony-stimulating factor,[7] and the oncogene *erb*B which encodes the epidermal growth factor receptor.[8]

Further support for the concept that oncogenes are indeed involved in the conversion of normal cells into tumors comes from experiments "transfecting" (transplanting) different oncogenes into primary rat embryo fibroblasts. Tumorigenic conversion of these cells requires the cooperation of at least two oncogenes — *myc* and *ras*. Transfection with either oncogene, by itself, is not sufficient to cause these cells to develop into tumors.[9]

ACTIVATION OF ONCOGENES

Much attention has been focused on the mechanisms by which proto-oncogenes are transformed into true oncogenes. Normally, gene expression is under strict control, and the amount of gene product present at any given time is regulated by a complex series of events. Control can break down at any of several critical points leading to unregulated quantities of gene product. First, physical displacement of a gene from the normal control of its microenvironment to another environment where it comes under the control of new regulatory sequences can lead to pathological increases in normal gene product. Second, mutations can occur in controlling sequences permitting high levels of the normal gene product to accumulate. Third, multiple copies of a normal proto-oncogene can be made by the cell causing, again, high levels of gene product. Finally, mutations in the proto-oncogene itself might result in a gene product which remains active yet escapes normal control mechanisms. All of these general mechanisms of oncogene activation have been demonstrated in selected human malignancies.

The physical rearrangement of proto-oncogenes from the microenvironment of one chromosome to that of another can occur with viral transduction as described above, and with chromosome translocations. By these processes, the normal proto-oncogene is juxtaposed with a second gene creating a malfunctioning hybrid. Chromosomal translocations have been observed repeatedly in several human malignancies. Some of the most striking examples are the translocations observed in Burkitt's lymphoma. This aggressive malignancy of childhood which affects the B-lymphocytes is associated with any of three different translocations involving chromosome 8. Translocation can occur between chromosomes 8 and 14, between chromosomes 8 and 22, or between chromosomes 2 and 8. When the translocation involves chromosomes 8 and 14 (as it does 75 percent of the time), immunoglobulin heavy chains are produced by the lymphoma cells; when translocation involves chromosomes 8 and 22 or 2 and 8, immunoglobulin light chains are produced. It is known that the *myc* proto-oncogene is located in band 24 of the long arm of chromosome 8.[10] Thus, it appears in Burkitt's lymphoma that *myc* is no longer controlled by its regulatory sequences. In its new location, the gene is regulated differently, and its normal gene product is expressed inappropriately.

Wilms' tumor of childhood (nephroblastoma) and retinoblastoma represent malignancies where the controlling sequences of a normal gene appear to be affected. Both malignancies are accompanied by small deletions of single chromosomes. In retinoblastoma cells, the deletion occurs in band q14 on the long arm of chromosome 13.[11] In Wilms' tumor cells from patients with aniridia, the deletion occurs in band p13 on the short arm of chromosome 11.[12] Studies with DNA probes have suggested that critical repressors of proto-oncogene activity have been removed in both cases, thus allowing increased gene expression.[10]

Gene amplification can occur following duplication of the complete genome, duplication of a single chromosome, or multiplication of a particular gene on a single chromosome. Regardless of the mechanism of gene amplification, the end result is the same in that large amounts of the gene product are produced. Perhaps the most dramatic illustration of gene amplification within a single chromosome is seen in tumor cells containing "homogeneously staining regions" (HSRs). These regions, so named because of their homogeneous appearance in the stained smears of chromosomes, can contain hundreds of copies of a single gene. Fragments of HSRs can detach to form extrachromosomal chromatin called double minutes (DMs) which lack centromeres but can replicate independently. Neuroblastoma is one of many tumors that exhibit both HSRs and DMs.[13]

The most subtle change that can occur in a proto-oncogene to turn it into an oncogene is a point mutation of a single nucleotide. This change has been demonstrated in the *ras* proto-oncogene where alteration of the triplet GGC (guanine-guanine-cytosine, which codes for glycine) to the triplet GTC (guanine-thymidine-cytosine, which codes for valine), is sufficient to interfere with the control of cell growth so that cells continue to grow indefinitely.

CLINICAL APPLICATIONS

Recent experimental evidence from three separate types of malignant tumors has shown that the degree of oncogene amplification is closely associated with the severity and metastatic potential of the primary tumor. That is, oncogene amplification in these cases is an excellent predictor of survival time. In some neuroblastoma tumors that occur primarily in children, amplification of the N-*myc* oncogene is low in the tumors of patients who ultimately do well and high in the tumors of patients who do not.[14] For this tumor, N-*myc* gene amplification is an independent prognostic indicator. In fact, it is a better predictor of survival time than either the size or the location of the primary tumor, or any other combination of clinical data.

More recently, the concept of linking oncogene amplification and the severity of malignancy has been extended to two common adult cancers: lung cancer and breast cancer. In the case of small cell lung cancer, it has been shown that patients whose cell lines had *myc* amplification survived only about half as long as patients whose cell lines did not have *myc* amplification.[15] Amplification of the oncogene *erb*B-2 (also known as HER-2/*neu*) has been shown to correlate with the severity of breast cancer. The more this particular oncogene was amplified, the worse the prognosis became, in that time to relapse was shorter and survival time was shorter. Oncogene amplification was a better predictor of outcome than even the size of the original primary tumor.[16] Another study showed that the gene product of still another oncogene (*ras*) was elevated in those women with breast cancer most likely to develop metastatic lesions.[17] In both of these studies on breast cancer, oncogene status was a better predictor of metastatic disease than any clinical variable, including original size and shape of the primary tumor. Thus, information about oncogene expression for any particular malignant tumor can be a powerful tool, helping the clinician to assess the prognosis of each patient and develop appropriate treatment plans where clinical indicators do not give sufficient warning of the tumor's strong metastatic potential.

In the future, it may be possible to screen populations at risk for the development of cancer by measuring oncogene activity. Populations that might benefit from such advances would include not only those with familial tendencies for neoplasm, but also those whose environment causes exposure to radiation or chemical carcinogens. Several human cancers follow infection by viruses (Burkitt's lymphoma and nasopharyngeal carcinoma are associated with Epstein-Barr virus, hepatic carcinoma is related to hepatitis B virus, cervical cancer is associated with papilloma virus, and certain non-Hodgkin lymphomas are associated with human T-lymphocyte viruses.). Populations with known viral infections and significant other risk factors might benefit from screening for oncogene activation.

Finally, if we can understand how the oncogenes work inside of the cell, we will be able to design novel and more specific chemotherapeutic regimens. The science of molecular biology is fast approaching the bedside in the treatment of cancer.

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RESULTS OF TREATMENT OF SNAKEBITE IN AN UPSTATE SOUTH CAROLINA COMMUNITY HOSPITAL

GEORGE P. CONE, JR., M.D.[*]

The incidence of poisonous snakebite in the United States is 8,000 per year resulting in between 13 and 20 deaths.[1] Deaths and serious injuries are most often related to bites by rattlesnakes and necessitate early and aggressive therapy. The incidence of serious sequelae to bites by the copperhead moccasin is very low, and a much more conservative approach to the management of these lesions is recommended.[4]

The community of Greenwood is a small textile town with a population of 30,000. It is located in the upstate area of South Carolina approximately 180 miles from the coast. In the immediate surrounding county, the major industry is farming. Cattle, soybeans, wheat, pines and peaches provide the bulk of the rural income. There is a great deal of fishing, boating, and skiing in area ponds and medium-sized lakes. Hunting is also very popular with a large area of government-maintained forest land immediately adjacent to the town and amply inhabited by deer and wild turkey.

With the population exposure to outdoor activities, the warm climate, and the favorable local habitat for snakes, the potential for a significant snakebite problem exists. Only anecdotal information concerning the types of snakes and the most effective treatment modalities for this area were available. For these reasons a review of the hospital experience with snakebite was undertaken.

RESULTS

Hospital admissions for snakebite have been reviewed from 1975 to the present. All charts related to snakebite were reviewed and tallied for LOS, type of snake, age of patient, time of bite, treatments used, complications, and outcome of hospital treatment. Followup for late complications such as serum sickness was not available. The results of the review are shown in the tables below:

Type of Snake

Copperhead	15
Timber rattlesnake	1
Unknown	6
Not Bitten	1
Total	23

Location of Bites

Right Hand	4
Left Hand	5
Right Leg	6
Left Leg	6
Chin	1
No Injury	1
Total	23

Date of Occurrence

March	1
April	2
May	6
June	3
July	3
August	3
September	3
October	1
November	1
Total	23

Time of Bites

12:00 — 9:59 AM	1
10:00 — 11:59 AM	2
12:00 — 1:59 PM	1
2:00 — 3:59 PM	0
4:00 — 5:59 PM	4
6:00 — 7:59 PM	3
8:00 — 11:59 PM	6
Total	17

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[*] Address correspondence to Dr. Cone at 1123 Spring Street, Greenwood, S. C. 29645.

Distribution of Bites

Male	18
Female	5
Oldest	75
Youngest	2
Average Age	31.43
Median Age	28

Treatment and Results	#	Avg Los
# Admitted to hospital	23	3.43
# Given Antivenin	17	3.47
# Positive skin tests	6	3.00
# Anaphylaxis (pos skin test)	3	2.67
		%
# Given Tetanus	14	63.6
# Given Antibiotics	12	54.6
# Incision & Suction	4	18.2
# Cryotherapy	0	0.0
# Tourniquet	2	9.1
Amputations	0	
Skin Grafts	0	
Serum Sickness	Unknown	
Deaths	0	
Length of Stay range	1-8 days	

Of the 23 snakebite patients, 15 were definitely due to the copperhead (Agkistrodon contortis). Of the six unknown envenomations, two were probably due to the copperhead, based on the environment where the bite took place and the limited degree of morbidity produced by the bite. Two probably represent the bite of a cottonmouth moccasin (Agkistrodon picivoris), again based on environmental history. The one rattlesnake bite is shaky as the snake was not brought in and is only described as having a pattern on his back and making a rattling noise. One patient was not bitten at all but was convinced that a bite had occurred. He exhibited marked agitation resulting in his confinement to the psychiatric service for eight days with a diagnosis of conversion hysteria.

DISCUSSION

Very few deaths have been reported to bites by the copperhead (Agkistrodon contortis) although it is second only to the rattlesnake as the most common offending snake in the United States.[4] The disproportionate number of copperhead bites in this series is due to several factors. The copperhead has adapted well to the presence of man and seems to thrive in the rural and small urban areas. Because of its reputation as being non-aggressive, it has not been hunted like the rattlesnakes. Thirdly, the location of this area of the piedmont of South Carolina at the upper boundary of the range of the cottonmouth moccasin and canebrake rattlesnake and at the lower boundary of the timber rattlesnake results in a much lower density of these snakes in the area. The diamondback rattlesnake has not been found in this area and is generally confined to the area of the state between Columbia and the coastal regions. The Coral snake is found more on the coastal plains of South Carolina, Georgia and the Gulf states.[3]

In this series, 41 percent of the bites were located on the upper extremities, 55 percent were located on the lower extremities. One bite was located on the chin and occurred because the patient was playing with the snake (the patient was intoxicated). This distribution is similar to patterns noted in other series.[4]

The bites all occurred in the warmer months from March to October. The one that occurred in March of 1986 reflects the unusually warm and early spring that occurred at that time. Three of the bites occurred in the late morning. The remainder of the envenomations occurred between 4:00 p.m. and midnight. Snakes are cold-blooded animals and have no internal temperature control, thus forcing them to assume the temperature of their surroundings. Because of this, they are most active when the temperature is between 27°C and 32°C. The lethal temperature for a snake is 42°C. At this temperature they can survive only for 10 to 12 minutes. In the southeast they tend to be more active at midday in the early spring and cooler fall months and in the late evening for the hottest parts of the summer.[5] In talking to a number of local hunters, all were surprised at the number of snakebites occurring in the evening and at night. Most seemed to feel that snakes are exclusively day animals and hide away or "roost" after dark.

Males predominated with 82 percent of the bites. The average age was 31.43 years. Because the young male is most often involved with hunting, fishing and other activities which bring him into areas frequented by snakes, it is logical that they would be the predominate group suffering from snakebite.[6]

The average length of stay for the entire group was 3.43 days. When comparisons were made between those given antivenin and those given only supportive care, the untreated group fared better with an average LOS of 2.80 days. Though these data are difficult to compare because of inaccuracies in determining the severity of the individual bite, they support the view that the bite of the copperhead rarely requires the use of antivenin or surgical intervention to prevent death, disability or prolonged morbidity.[7]

The three A's of snakebite treatment are *Antivenin, Antitetanus,* and *Antibiotics.*[8] In this series 77 percent received antivenin, 64 percent received appropriate antitetanus therapy, but only 55 percent received antibiotics. No cases of tetanus resulted in those patients not receiving appropriate antitetanus therapy. Infections did not prolong hospital stays for any of the surveyed patients. This variation in the treatment pattern for snakebite in one hospital reflects the fact that a number of different physicians (ten in this group) are tending such patients at widely spaced intervals (11 years) with the result that no one physician accumulates any substantial experience in the techniques of snakebite therapy. This problem can be most easily remedied in the private medical sector by the use of a protocol available to all physicians confronted with a snakebite victim and tailored to the snake population of the area. It should be updated at regular intervals. A second approach would identify one physician as expert for the area and consult this physician with each occurrence.

One other problem encountered concerns the horse serum skin test. In this group of patients, three were noted to have swelling at the site of the test with accompanying erythema. None of these were given antivenin. However, three patients were noted to have erythema only, without swelling, and were interpreted as negative tests. Each of these patients experienced symptoms consistent with anaphylaxis when given antivenin. In the current edition of the PDR, Wyeth states that "A positive reaction to a skin test occurs within five to thirty minutes and is manifested by a wheal with or without pseudopodia and surrounding erythema."[10] The data found in this review suggest that *ANY* erythema or swelling at the site of the skin test should alert one to the possibility of horse serum sensitivity.

CONCLUSIONS

The marked preponderance of copperhead snakebites in this area and the absence of the eastern diamondback rattlesnake have resulted in an excellent treatment record at this hospital. However, the variations in treatment of individuals suggest the need for a protocol, tailored for the area, to assist practitioners in extending proper care.

The experience at this facility supports a continued conservative approach to treatment of snakebites in areas with a marked preponderance of copperheads over the more venomous rattlesnakes and cottonmouth moccasins.

The data also suggest that information available to the practitioner concerning horse serum allergy and skin testing is not adequate and should be revised. ☐

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Pregnancy: Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients, adverse effects were reported in 121 (4.7%). Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

DOSAGE AND ADMINISTRATION
The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

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THE MEDICAL MANAGEMENT OF DIABETES DURING PREGNANCY

KAY F. McFARLAND, M.D.[*]

It has become increasingly clear that meticulous control of the blood sugar during pregnancy positively influences the outcome of diabetic pregnancies.[1] The mortality of infants of mothers first diagnosed as having diabetes during pregnancy is no different from that of other newborns. However, even with up-to-date medical care, the mortality of infants of pregestational diabetic mothers is three times that of the general population.[2] In addition, morbidity is increased for both mother and infants, whether or not diabetes existed prior to pregnancy or was diagnosed first during gestation. For these reasons there is continuing emphasis on applying proven regimens of therapy and defining new treatment methods. The purpose of this paper is to outline current recommendations for the medical management of diabetes during pregnancy.

CLASSIFICATION

The complexity of diabetes management during pregnancy is largely dependent on the lability of the blood sugar or type of diabetes present[3] (Table I). For example, women with preexisting type 1, ketosis prone, diabetes usually are insulin sensitive and prone to have hypoglycemic reactions during the first trimester of pregnancy. Tight control may be difficult to achieve in early pregnancy and the therapeutic emphasis is on the regular timing of meals and frequent home glucose monitoring in order to avoid severe hypoglycemic reactions and extreme hyperglycemia. Interestingly, these same women become much more insulin resistant as pregnancy advances and even though fairly large doses of insulin may be needed during the third trimester, good control is usually easier to achieve as the pregnancy advances.

Hyperglycemia during pregnancy, even when asymptomatic, is associated with increased infant mortality. Therefore, screening for gestational diabetes is now advocated. Once the diagnosis is made, gestational diabetes is treated very much like type 2 diabetes mellitis. Very careful attention is paid to balancing the type and amount of insulin in these women with their meal pattern and activity schedule. Usually the glucose level can be maintained within the normal range and hypoglycemic reactions are rare.

TABLE I

CLASSIFICATION OF DIABETES DURING PREGNANCY

Pregestational diabetes — dx diabetes prior to pregnancy.
  Type 1 — Ketosis prone insulin dependent diabetes mellitis (Rx insulin).
    Complications diabetes and/or previous pregnancies.
  Type 2 — Non ketosis prone diabetes mellitis (Rx insulin).
    Complications diabetes and/or previous pregnancies.
Gestational diabetes — dx diabetes during pregnancy
  (Rx diet with or without insulin).

Potential complications of diabetes may affect recommendations regarding the advisability of pregnancy, as well as management decisions. For example, retinopathy may be exacerbated during pregnancy. In pregestational diabetic women, this fact should be discussed, as it may influence a couple's decision regarding whether pregnancy should even be considered. Diabetic renal disease negatively affects fetal outcome and also may influence decisions about whether pregnancy is advisable. Finally, the history of complications rising in previous pregnancies, such as a stillbirth, influence management of subsequent pregnancies and therefore should be included in the classification scheme.

Basically then, diabetes can be classified as to whether or not the disease was present prior to pregnancy (pregestational vs. gestational diabetes). Pregestational diabetes is subdivided into type 1, insulin dependent ketosis prone diabetes mellitis and type 2, non insulin dependent, non ketosis prone diabetes mellitis. To enhance management decisions, the complications of the diabetes and/or of previous pregnancies are added to complete the classification scheme.

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DIAGNOSIS

Even mild asymptomatic elevations of the blood sugar during pregnancy adversely affect perinatal outcome.[4] For this reason, screening for hyperglycemia in pregnancy has been advocated (Table II). However elevated glucose levels are very uncommon in teenage pregnancy[5] and detection of cases in this age group requires that a very large number of screening tests be done which often is not practical. Generally then it is recommended that diabetes screening be done on pregnant women over the age of 20, unless they are known to have pregestational diabetes.

Screening is done between the 24th and 28th gestational week by obtaining a one-hour glucose value after the oral ingestion of 50 grams of glucose. If the one-hour screen is equal to or greater than 140 mg/dl, then an oral glucose tolerance test using 100 gram glucose load should be done.[6] The oral glucose tolerance test should be done initially, without the screening test, if there is fasting glycosuria, a past history of gestational diabetes, or the history of a stillbirth. Diabetes is diagnosed if two serum or plasma glucose levels exceed the following values during the glucose tolerance test: 190 mg/dl after one hour, 165 mg/dl after two hours, and 145 mg/dl after three hours (Table III).

Frequently, screening tests are done using small glucose reflectance meters which are available in a physician's office or at health departments. The values obtained during testing should be checked periodically for accuracy by comparing the tests run on the reflectance meter with those performed in the laboratory on plasma or serum. However, to accurately diagnose diabetes, serum or plasma specimens should be used and the test performed in a hospital or clinical laboratory.

TABLE II[°]

DETECTION OF DIABETES DURING PREGNANCY

Screen Obtain a 1-hour blood sugar level after a 50 g oral glucose load on women not known to be diabetic who are over age 20 and are between 24 and 28 weeks gestation.
Glucose Tolerance Test Perform GTT if patient has any of the following:
- 1-hour glucose screen 150 mg/dl
- Fasting glycosuria
- Past history of gestational diabetes mellitis
- Past history of a stillbirth

TABLE III[°]

CRITERIA FOR DIAGNOSES OF DIABETES DURING PREGNANCY

If on 2 or more days fasting blood sugar 105 mg/dl
or
after a 100-g glucose load 2 blood sugars equal or exceed:
- 190 mg/dl after 1 hour
- 165 mg/dl after 2 hours
- 145 mg/dl after 3 hours

MANAGEMENT OF HYPERGLYCEMIA

Diet

Basically, a well-balanced nutritious diet with three meals and one to three snacks is considered to be a healthy meal plan for a diabetic woman during pregnancy. The meals should be eaten at approximately the same time each day and large amounts of refined carbohydrates should be avoided. The calorie content of the diet should be adequate to promote a weight gain of 25 to 30 pounds. Since weight reduction is not recommended in pregnancy, a measured caloric diet generally is not needed unless a patient is failing to gain weight appropriately or gaining weight at an excessive rate. As a general rule, one can consider the caloric intake adequate if the urine is free of ketones.

In order to reduce fluctuations in the blood glucose, foods containing large amounts of refined carbohydrates such as pies, cakes, cookies and candies should be avoided. The elimination of foods containing simple sugar generally does not affect the fasting blood glucose, but may reduce postprandial glucose elevations. If a woman is taking insulin, the emphasis should be more on the timing and consistency of meals than on calorie

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[°] Tables II-IV adapted from:
Rakel: Textbook of Family Practice, Philadelphia, W. B. Saunders Co., 1984. Reprinted by permission.[8]

content. In fact, the nutrient needs of the diabetic and non-diabetic woman are about the same and a diabetic meal plan generally is aimed at providing a balance between food intake, exercise, and insulin[7] (Table IV).

TABLE IV°

MANAGEMENT OF HYPERGLYCEMIA

Diet

Three well-balanced meals with 1 to 3 snacks.
Calories: Adequate to promote a weight gain of 25-30 pounds during gestation.
Carbohydrates: Foods containing simple sugar should be avoided.
Timing: Meals and snacks should be at the same time each day.

Insulin

Initiate treatment with 0.5 to 0.7 units/kg body weight
if: Fasting blood sugar 105 mg/dl
Postprandial glucose 150 mg/dl

Adjust dose to achieve:
Fasting blood sugar sugar = 60 to 90 mg/dl
2-hour postprandial glucose = 80 to 120 mg/dl

Insulin

In non-pregnant adults with type 1 diabetes, the average daily dose of insulin is 0.7-0.8 units per kg of body weight, often divided into two or more doses. During pregnancy, the insulin dose may increase to above 1 unit per kilogram, particularly in the third trimester of pregnancy. Insulin therapy may be begun with 0.5-0.7 units per kg or between 20-30 units of NPH or lente insulin every morning before breakfast. The dose is regulated to try to maintain the fasting glucose between 60 and 90 mg/dl and the two-hour postprandial glucose between 80 and 120 mg/dl. The total dose of insulin needed by the end of the third trimester often exceeds 1 unit per kg.

Insulin, rather than oral agents, is used to control gestational hyperglycemia and type 2 diabetes during pregnancy. Initially, if just the fasting blood glucose is elevated, and the postprandial levels are within the normal range, only one dose of insulin, NPH or lente, may be given at bedtime. This rarely happens in the non-pregnant state, but is not unusual in gestational diabetes. On the other hand, if the postprandial glucose levels are the only ones that are increased, lente or NPH insulin plus regular insulin may be given before breakfast with additional doses of regular given before lunch and supper if needed. When insulin is given only one time a day and the glucose level drops to less than 60 mg/dl between breakfast and supper but the glucose levels after supper or before breakfast are elevated, the dose then should be split, initially giving about two-thirds of the total dose before breakfast and one-third before supper.

Home Glucose Monitoring

In order to tightly regulate glucose levels, both type 1 and type 2 diabetic women should check their own blood sugar at home on a regular basis even prior to conception; gestational diabetic patients should be taught home glucose monitoring as soon as they are diagnosed.

Since finger stick blood sugars are done on capillary blood, there may be a slight difference between the glucose values determined using this method and those done on serum or plasma. However, most of the meters have been calibrated to register reasonably comparable results. If glucose values obtained at home are not within 15 percent of those obtained in the laboratory, further instruction on glucose monitoring should be provided prior to using levels obtained at home to alter the insulin dose. Once monthly or on each office visit, the patient should check her own glucose level using her meter and strips to compare to values obtained in the office or laboratory.

When insulin reactions are frequent, home glucose values should be taken before meals rather than two hours after eating. To obtain the best control, most patients need to check glucose levels two to four times or more per day during pregnancy (Table V).

TABLE V°

METHOD OF REGULATING INSULIN

Increased fasting blood sugar: Start or increase NPH/Lente insulin at bedtime. Initial dose 0.5-0.8 units/kg.

Increased postprandial blood sugar only: Start or increase NPH/Lente insulin before breakfast or increase regular insulin given before meals.

If glucose is 60 mg/dl between breakfast and supper while glucose levels after supper or before breakfast are elevated, split the dose of insulin, initially giving ⅔ before breakfast and ⅓ before supper.

However, the frequency of monitoring must be individualized to obtain the best possible results. For example, a woman with type 1 diabetes during the first trimester may check glucose levels before meals and at bedtime until at least 80 percent of these are within the accepted normal range. Then the determinations may be done fasting and two hours after meals. If only the postprandial levels are elevated, it is often helpful to increase the interval between the time of the insulin injection and the meal. Initially, women are advised to take the insulin about 30 minutes before eating, but if the postprandial levels remain elevated, this time interval may be increased to 45 minutes or an hour. In those patients with more stable diabetes, in whom the blood glucose is usually within the normal range, only one or two daily glucose values may need to be determined after the insulin dose and meal patterns have been standardized.

TIMING OF DELIVERY

Patients who are treated with insulin are usually delivered around the 38th week of gestation and those that are diet controlled around 40 weeks. To confirm fetal lung maturity, a lecithin/sphingomyelin (L/S) ratio and phosphatidylglycerol level is determined from amniotic fluid obtained. Optimally, the L/S should be 3:1 although the fetal lung usually is mature if the ratio is 2:1 with phosphatidylglycerol present. □

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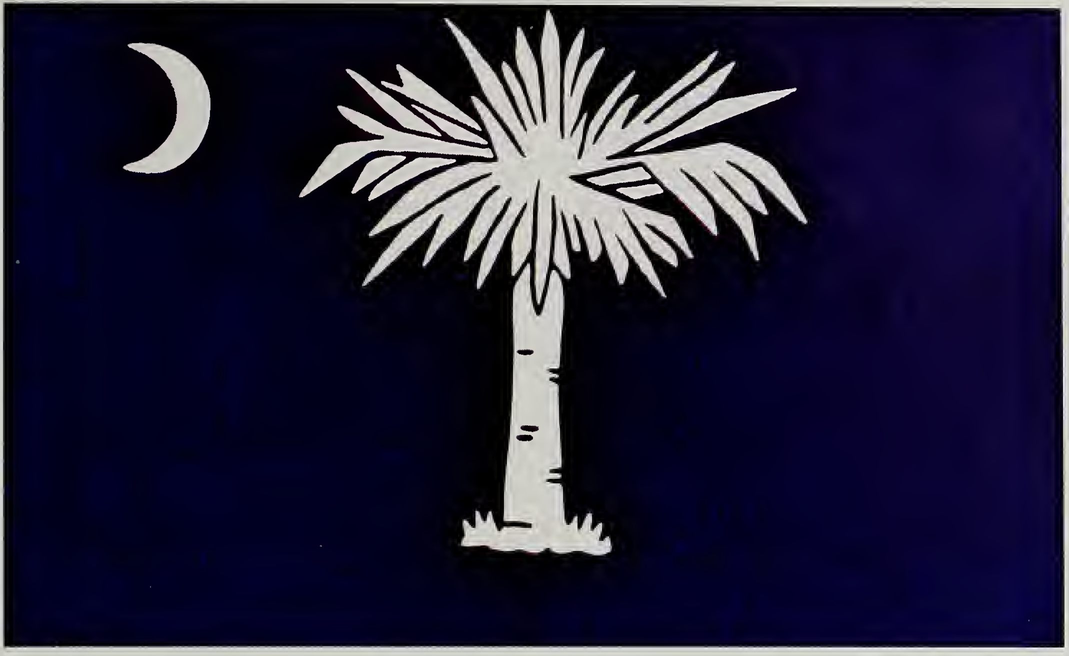

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THE MEDICAL TRIAL

JOHN R. GUTHRIE, D.O.*

> *"The physician-patient relationship is a very personal thing and at the heart of it is the understanding that the physician must accept responsibility to act as the patient's advocate."*[1]
>
> — William S. Hotchkiss, M.D., President-Elect, American Medical Association

INTRODUCTION

In the winter of 1980, a certain young man was arrested in Spartanburg, S. C., on a variety of alcohol and drug related charges. He was placed in a cell in the county jail. To register his opposition to this affront to such remnants of his dignity that were still his, he knotted together two bed sheets, and with perhaps more imaginativeness and determination than he had often shown in his young life, managed to hang himself from the bars of his cell where he was found by the jailer, slack-jawed, cold and dead, some hours later.

The young man's family, to include his daughter, a slight whisper of a seven-year-old girl-child, were and still are patients of mine. Following the young man's demise, his parents mounted an aggressive campaign for the custody of the child, maintaining, essentially, that the child's mother was of greater perversity and more negligent inclination than were they. This occasioned my being called to court by the mother's attorney to testify as to my observation concerning the little girl's well-being while in her mother's custody.

I did so and considered myself to have been thoroughly abused by the opposition attorney (was I, after all, not a PHYSICIAN!). It was only after I'd gone home to lick my wounds and continued my practice for some days that I got a call from the mother's attorney expressing his appreciation of my willingness to testify. The mother, too, was effusive in her praise when I saw her, and with time I recognized that the trial had been a milestone for my seven-year-old patient and her mother and had, with my help, been resolved in such a manner as to provide, most probably, the best available situation for the child.

I came to realize that the courthouse, no less than the hospital, is a major crossroads in the life of the community, and there will be found expression of all that is best among us as well as that which is something less. For the physician who is willing to undertake proper preparation for providing testimony in court, it may prove to be an interesting diversion and provide an inside look at a fascinating system. The judicial system, like our medical system, possesses an elegance and tradition distilled from the lambent of human experiences rooted in millenia well past, and in the final analysis is among the highest expressions of our culture and civilization. Trial by jury is a reasoned substitute, after all, for settling disputes by throwing stones at one another.

We live in a litigious society. For a busy practitioner, it is not unusual to have a patient who is involved in related litigation, their injuries or illness having legal implications as well as medical ones. Aside from the well-publicized potential for being a direct party to litigation, the physician may, from time-to-time, find himself or herself called upon to provide a deposition, to testify before a Workman's Compensation Commission, or to appear as either expert witness or as treating physician in the trial of a patient whose injury or loss has legal implications. The author's experience in legal proceedings since that first occurrence has included participation as treating physician or medical witness for the defendant and for the plaintiff, as an industrial and school physician, as well as reviewing malpractice matters for the South Carolina Medical Association and others.

PREPARATION

Preparation for the trial begins with thoroughly familiarizing oneself with the medical records of the patient in question. To review the chart or charts in detail, and to know the time the patient was first seen, the time the injury occurred, the nature of the injuries, and their treatments, without fumbling through the chart, can give an impression of reasoned self-assurance and medical competence when questions concerning these matters are asked, as they surely will be. It would also be helpful to realize that, in particular with motor vehicle accidents (and other accidental injuries as well), the fact that a case is going to trial indicates that there are some questions about the case and about the client and about the client's injuries or it would very likely be settled out of court. Litigation, after all, is quite expensive and time-consuming for all concerned. Just as a physician would avoid unnecessary surgery, so must the attorney avoid court.

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If a given case is going to trial, then I feel that it is helpful to investigate carefully; specifically to talk with the patient where practical, and to insure that there are no related accidents, incidents, or legal cases that you are not aware of. This can be a way of avoiding embarrassment in the courtroom.

Recall of the plaintiff, or defendant, patient prior to trial to emphasize to them the importance of avoiding testimony being weakened by ignorance of previous cases can be revealing at times, and avoids the patient then being held out to the jury as a dishonest historian and the physician being portrayed as less than thorough. Most patients understand and will cooperate. Competent opposition attorneys will check thoroughly through insurance company files and other sources for this sort of information. For me, this is a lesson very painfully learned from a patient who had been found at mid-trial to have had multiple altercations, emergency room treatments, indictments for driving under the influence, fighting with the arresting officer, and involvement in motor vehicle accidents and related injuries similar to those for which the trial was held. The defense attorney had done his homework. When this sort of disaster does occur, and when the opposition attorney says, "Don't you think, Doctor, it would have been helpful had you known this history?," there is nothing one can do but reply in the affirmative, thus becoming, in this case, the defendant's witness. If a history of previous accidents has been gathered, even after the end of a period of treatment, the damage may be lessened.

THE TRIAL

There are certain things that will very predictably occur when one appears on the witness stand following being sworn "to tell the truth, the whole truth, and nothing but the truth." The physician-witness will be asked his name and his occupation. He is then likely to be asked to give the court the benefit of his education and experience. It is well to have a brief summary ahead of time, not so as to seem to be rehearsed, but to the point of being able to be concise and to the point in giving a brief *vitae* for the court. One's credentials should be reviewed as a matter of fact, seeming neither pompous and pretentious nor overly reticent. This is followed by direct examination of the physician who will be asked about the treatment of the patient, when he first saw them, their condition, diagnosis, and treatment regimen.

Once again here, to summarize this, to have prepared before the trial, sometimes using a tape recorder to critique your comments is helpful. This allows for one to give concise and coherent, though rather impromptu and spontaneous delivery. It is helpful to have standard medical literature references to illustrate the points one wishes to make. For instance, it is common to deal with neck injuries for the court of law. Acceleration injuries to the neck were first seen in catapulting Navy planes from early aircraft carriers. The mechanism of injury is described well in such textbooks as the DePalma's classic *The Intervertebral Disc*[2] or Richard Rothman's *The Spine.*[3] Orthopedic texts such as Turek's *Orthopaedics — Principles and Their Application*[4] can be helpful in emphasizing certain points. Drawings, which can be reproduced in poster size at many copying services, may provide useful illustrations for the jury, as may skeletal preparations and anatomical models. It is important that explanations using such illustrations be concise, to the point, and basic enough for the corner grocer to understand.

Juries often enjoy hearing the academic and specialty qualifications of the author of a textbook referred to. They like to know, for instance, that Dr. Julian Youmans, who edited and wrote for the six volume textbook, *Neurological Surgery,*[5] is a professor of Neurosurgery at the University of California at Davis. Judicious use of the medical literature can mean that one's presentation is not that of a single and isolated practitioner, but it is supported by the massive weight of substantial medical literature in the field. If one carefully reviews one's presentation in this respect, it is possible to keep them brief, but to work in illustrations and academic reference that add both color and light to material which can otherwise be dry as dust to the lay jury. To have appropriate references available and on the tip of one's tongue, and to have reviewed and prepared as noted above, in particular, in recording it on tape and then listening to yourself, can add greatly to the authority of the presentation.

There are several factors which are likely to come up as the opposition attorney may see them as something of an "Achille's Heel" for the physician. First of all, medical services are expensive, and so it would not be surprising, for instance, for the opposition attorney to list one's fees on a chalkboard one at a time for the jury, and attempt to intimidate the physician-witness by pointing out how much money was charged. He might ask, in fact, as one defense attorney did to me recently, "Don't you make a business out of this sort of case?," to which I replied, "Well, I never thought of it that way. I've never turned anyone away for lack of money, and I suppose that's not too business-like," and went on to comment that incidentally he was not here for free and it might be sort of like the pot calling the kettle black. This retort, quietly rendered, seemed to work quite well. When the attorney pressed the attack further, I offered to donate my fee to his church, if he would donate his to mine, which brought laughter from the jury, a call for order in the courtroom, and defused the assault entirely.

SCHEDULING

One of the most difficult aspects of providing a medical contribution to a trial is the time involved. In particular, for the family or other practitioner who has a volume practice, to end up cutting out first one morning's patients and then the afternoon's because the trial did not start on time, and then the next morning, can make one have a sense of impending disaster since the meter is still ticking on the payroll, the rent, and the electric bill in the clinic. The attorney can often help circumvent this difficult part of the problem if asked to give a precise approximation of the trial date before the trial occurs. Generally, months ahead of time, the trial date can be narrowed down to one or two, two week sessions of court. As the trial rosters are prepared by the court, the attorney involved can provide the physician with information as to which number the trial he or she is involved in is. "We are number 16 on the docket in 32 cases." This would suggest, typically, that one would go to court during the middle of the two-week session. As the day approaches more clearly, it is possible for the attorney to probably be able to pin-point the day or one of two days on which the appearance will be called for.

It is typical that the judge will allow a physician-witness, in deference to his busy schedule, to appear out of the usual order on the witness stand. Thus, the alert and helpful attorney can usually narrow the time down to a given afternoon or a given morning. Further, many attorneys can set up, once they have gotten close enough to the trial to know the exact day the physician's testimony can be called for, can arrange to have the physician called into court at a given time on that day. So, if the attorney calls at nine o'clock and says that one needs to appear at one o'clock, while this may call for the rescheduling of an afternoon's patients, it is not the total disaster that rescheduling first one day and then another can be. It should be noted here too, though, that patients are generally very understanding about these atypical and emergency situations that call for their physician to be away for a period of time, and will reschedule an appointment.

In our clinic, we often start the day especially early on a trial day. If we need to get particular patients seen on a given day on the day of the trial we might need to come back late in the evening after the trial to see him or her as the case may be. For the most part, however, we are able to change the schedules on regular appointments to the day previous or the day after so that the day of the trial becomes, in fact, an interesting variation on the usual routine rather than a scheduling catastrophe.

PLAN AHEAD

It is well to plan ahead with one's office manager so that one's personnel will either be given time off, if this is called for, or will catch up on billing and paperwork, office cleaning, and the like while the physician is away. In some circumstances, with another physician present in the clinic, some medical services can continue to be rendered by the registered nurse though the physician is in court. Allergy shots, for instance, or physical therapy visits and the like, that do not require the immediate presence of the physician are such possibilities. At Guthrie Clinic, we are reluctant for most injectables to be given, however, without a physician on the premises in case of the occurrence of anaphylasix.

In the matter of assistance with scheduling, as with other matters related to the trial, it is imperative that the physician-witness feel a responsibility in arranging that all homework be done. Some attorneys are as meticulous as possible with the "homework" that precedes a trial. Others, in short, are not.

For example, when x-rays are to be shown, it is important that an x-ray view box be brought. Also, making sure that an easel is there for showing one's illustrations, line drawings, and the like can be important, as well as a chalkboard. A telescoping pointer gives one something to do with one's hands and is also helpful in pointing out certain aspects of the line drawings, photographs, or x-rays that are seen. The physician who is well prepared for the trial can convey to the jury the importance of what he is saying and the interest and excitement of dealing with human anatomy, injury, illness, and healing.

DRESSING FOR COURT

When one goes to court, one should attempt to look like a physician as well as sound like one. Generally, a suit, coat and tie are quite adequate. If one wishes to underline and emphasize one's authority (this might be helpful, for instance, to the particularly young physician), three-piece suits, pin-striped, dark blue, should be the choice. A stethoscope in the right-hand pocket is appropriate. I have, on occasion, been called directly from the clinic and gone to court in a white coat. It is often quite helpful to have a uniformed office nurse go along to help with the illustrations, x-rays, and so on.

It is my feeling that generally juries prefer that their physicians be somewhat conservative in their appearance. Unduly long hair and facial hair, I feel to be inappropriate, though this may vary in significance from one area of the country to another.

THE CHART

Reviewing the chart ahead of time and making sure that it is in proper order and understandable is essential. If there are any additions to be made, they should be written, dated, and initialed so as to avoid any possible appearance of attempting to mislead the court or to improperly alter the record. In a recent trial, for instance, in reviewing my notes, I noted that under the original physical examination, I had omitted to note a surgical cicatrix, well healed, on the upper left quadrant of the patient's abdomen under history and physical, though, I had mentioned the surgery under surgical history. I made a note to the effect that it had been inadvertently deleted, dated it for the date of the revision and initialed it. It was very obvious that no attempt to mislead was here, but simply an attempt to point out a shortcoming in the records in a timely and appropriate manner.

The materials in the chart should be in chronological order. I simply set mine up so they read left to right, top to bottom, front to back, in chronological order when they go to a medical trial and I find it easier to flip through them that way if I have to refer to them. A chronologic summary on the chart-front is helpful, both by virtue of its presence and the thought and organization required in its production.

CONCLUSION

The above ideas are a brief summation of this family physician's ideas related to courtroom presentation. Further reading such as Rein's *Primer on Soft Tissue Injuries*[6] can also be helpful.

The court system is, generally, an adversarial one. It is the opposition attorney's role in life to bring close scrutiny and critique to your assertions. Maintaining one's equilibrium is important, and angry flare-ups tend to weaken one's position. Further, remembering that the opposition attorney is, after all, simply acting like an opposition attorney, and that we as physicians are no more above the authority and interrogation of due process than any other segment of the population is helpful. In addition to the above, being a bit thick-skinned doesn't hurt either.

Finally, for those for whom the occasional court appearance is still an onerous duty, keep in mind that accurate, and effective medical testimony can be of tremendous assistance to your patient who has been wronged. □

(See next page for references.)

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Editorials

AIDS: LIFE ON THE NEW FRONTIER

May you live in interesting times.
— ancient Chinese curse

As this issue of *The Journal* went to press, I returned from the annual infectious diseases meetings convinced more than ever that we indeed live in interesting times. A few impressions:

- Surrounded by CDC epidemiologists on the flight from Atlanta to New York, I sensed that they believe every word of their frightening projections. *Where will it end?*
- Sharing a taxicab from LaGuardia with a prominent government official, I was told that no solutions to the financing of care for AIDS victims are in sight. The government takes the position that funding should be along the same lines established for other diseases — even though so many of the young, economically-unestablished victims have no insurance.
Who will pay the costs?
- As Dr. W. Eugene Mayberry, chairman of the Presidential Commission on the HIV epidemic, opened the convention with a calm and well-reasoned address, he is *heckled* by gay activists. Heckling has apparently become commonplace at meetings where AIDS is discussed. Dr. Mayberry's resignation a few days later came as no surprise. *Who would wish to assume a leadership role in this climate?*
- The scientific sessions of the meetings offered no breakthroughs. One abstract pessimistically but accurately observed that "no previous models in infectious diseases have the same characteristics of HIV disease: probable 100% mortality with transmissibility over as long as 10 years." Vaccines were hardly mentioned. Yes, we may find better drugs but they, too, will only be palliative. *Is this the ultimate chronic disease?*
- Although colleagues who have treated only a few AIDS patients projected optimism (e.g., "This is why I went into medicine!"), those who have dealt with the multitudes seemed tired and disheartened. Some of the most energetic, idealistic persons I know showed signs of burn-out. Residents and medical students in high-incidence areas are often reluctant to work with AIDS patients. *Will our profession survive this epidemic intact?*

The AIDS epidemic is something new, something for which we have no historical analogy. It forces us to re-think many, perhaps most of our traditional concepts. We are living on a *frontier*. Frontiers have a way of reminding us that the veneer of our civilization is thin indeed.

Less than two and a half centuries ago, the South Carolina upcountry was a different kind of frontier, full of different kinds of dangers. Searching for parallels, I turned to the history of the South Carolina Indians written by the late Columbia physician, Dr. Chapman J. Milling. There I found a frightening story told by a Mrs. Gold (alternately spelled "Gould"), who arrived at the home of a Mr. Friday in Saxa Gotha township at midnight on May 7, 1751.[2] The next morning, Mrs. Gold swore to the following statement:

> Two Indians came to my House. . . . The Indians were Savannahs. They came here about Dark and sat down very civil and my husband being able to talk their Tongue they talked a great deal together and I gave them supper and they asked my Husband for pipes and tobacco and he gave it them, and we all sat up until midnight and then we all went to

> sleep, and they lay down too and pulled off their Mockasins and Boots, one of them broke his Pipe and came to the bed of my Husband and handed to him his Pipe out of his mouth and lay down again, and we all dropt off to sleep; and when the cocks began to crow they came as I suppose to the bed and shot my Husband through the head, and a young man lying upon the floor was shot in the same minute, and the Indians I suppose, thinking the bullet had gone through my Husband's head and mine too struck me with a tamhook under my right arm. They supposed I was dead and one of them went and killed both my children, and they came and took the blankets from us and plundered the House of all that was valuable and went off; in that bad condition I have lain amongst my dad two Days, and by the help of Providence one of my Horses came to the House and so I came to Martin Friday's House.

Mrs. Gold died of her wounds a few days later.

Does this tragedy of the early South Carolina frontier hold any parallels for our facing the frontier of the AIDS epidemic? At least three aspects may be relevant: (1) the need to re-think the Samaritan contract; (2) the need to balance caring with caution; and (3) the need to define our own frontier mentality.

(1) *The need to re-think the Samaritan Contract.* Dr. Milling concluded that "the murder of this family constitutes one of the most revolting incidents in the history of the South Carolina upcountry.[2] That the Gold family behaved as good Samaritans — taking the Indians into their house — heightens our sense of outrage.

Among the traditional social contracts by which we operate as physicians is the Samaritan contract — our obligation to help those who seek our services, irrespective of diagnosis or ability to pay. Although it has become unfashionable for codes of medical ethics to contain provisions concerning "the duties of patients to their physicians" (as they once did), I suggest that the Samaritan contract, like other contracts, should be reciprocal. Already, we have learned of incidents in which patients who *knew* that they were HIV-infected failed to inform health care workers including physicians carrying out invasive procedures. We should seek legislation to insure, to the fullest extent possible, our right to a safe work environment. *The helped must not knowingly harm the helper.*

(2) *The need to balance caring with caution.* In retrospect, the Gold family's tragedy might have been averted by the recognition that not all Indians are good Indians. In retrospect, they might have insisted that the Indians sleep in an area of the house separate from the five settlers, who could have taken turns staying awake and keeping watch. Even so, it would of course not have been possible to guarantee complete safety.

Today, we recognize that the risk of acquiring HIV infection even after a significant exposure is extremely small. At the recent meetings, it was estimated that the risk associated with a single significant accidental exposure (i.e., percutaneous injury or mucosal splash accident) to blood containing HIV is 0.13% (95% confidence intervals 0.000066 to 0.0074).[3] By comparison, the risk of acquiring hepatitis B infection after a similar exposure is six to 30%. Nevertheless, it has become apparent that we should observe *universal precautions.* Anticipated exposure to the blood or body fluids of *any* patient calls for the use of rubber gloves. *Everyone should be treated alike.*

(3) *The need to define our own frontier mentality.* Of the Gold incident, Dr. Milling observed that "the perpetrators were not local Indians who had been dispossessed of their country, but simply outlaws . . . it is unfair to judge all Indians by the acts of a few lawless individuals, yet from the standpoint of the local settler of the period, it is impossible to blame him for the bitterness which such incidents engendered." Retrospectively, we see the settlers' dilemma from both sides. Today, we generally concede that our treatment of the Indians — largely due to such reactions — left the darkest stain on the fabric of our nation's history.

Frontiers afford a unique opportunity to define and display one's aspirations, ideals and character. They afford ample opportunity to declare the law of every-man-for-himself. Today, we face the temptation, for instance, to avoid carrying out procedures on HIV-positive patients even while we tacitly insist that others (most notably, our colleagues in nursing) cannot enjoy the luxury of such discretion.

Perhaps we should remember that the heroes of those Saturday morning matinees of our youth were those who rose above the confusion of their times and obeyed the nobler instincts. If the AIDS epidemic gives us good reason to review our contracts and to exercise caution, it also gives us a mandate to demonstrate *courage*. Winston Churchill called courage "the first of human qualities because it is the quality which guarantees all others." Perhaps we should incorporate *courage* into our ever-emerging concept of what it really means to be *professional*. If we are to preserve our profession in these interesting and difficult times, we must stand committed to the highest ideals of our collective past.

— CSB

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I would like to discuss several ways whereby we can enhance SCIMER's activities. First, memorials and honoraria are welcome and will be properly acknowledged. Funds and bequests for specific purposes have been received and are encouraged. Proper distribution and accounting, as specifically directed, will be done. Consider a contribution as a gift to your colleagues at Christmas time instead of a box of nuts, candy, etc. This can be an undesignated gift, or it can be for a specific purpose such as a medical school scholarship. The Leonard Douglas Memorial Fund continues to receive funds that will be used for a continuing lecture series at the SCMA Annual Meetings.

The SCMA Board of Trustees has authorized inclusion of a donation to SCIMER on the annual billing for 1988 dues and we encourage each of you to respond to this opportunity.

The newly appointed SCIMER Board plans to become more active and to improve the visibility and the activity of the organization. We will be working closely with the SCMA Auxiliary on the proposed Health Education Van project and the scholarship programs. Dr. Charlie Duncan gave a most appreciated endorsement of SCIMER when he devoted his President's Page in the September issue of *The Journal* to the goals, the potential and the needs of this valuable arm of SCMA. Let us make SCIMER a really significant and effective part of our medical organization.

Euta M. Colvin, M.D.
President, SCIMER Board
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THE JOURNAL
OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

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THE TENTH ANNIVERSARY OF THE USC SCHOOL OF MEDICINE

INTRODUCTION

O'NEILL BARRETT, JR., M.D., GUEST EDITOR[*]

It is a privilege for me to serve as guest editor of *The Journal of the South Carolina Medical Association* celebrating the tenth anniversary of the University of South Carolina School of Medicine in Columbia. Medical education has a long and rich tradition in this state and it is interesting to recall that the Medical College of South Carolina (now, of course, the Medical University of South Carolina) celebrated its sesquicentennial in the same year that the Budget Bill of 1974 assured establishment of the second medical school of the state of South Carolina. That the first school was located in Charleston was no fault of the controversial Thomas Cooper, one of the two "founders" of the Medical College. He fought vigorously but unsuccessfully to have the school in Columbia in conjunction with the South Carolina College (now the University of South Carolina) of which he was President. Perhaps the feisty old curmudgeon has achieved a degree of posthumous serenity now that there is a medical school in his adopted city.

Much has happened during the first decade of the school's history, and selected examples are developed in this issue of *The Journal.* Dean Humphries describes briefly some of the achievements of the school and is obviously very proud of the fact that we can already look all around the state and see the impact that our graduates are having on health care delivery in South Carolina.

Mr. Thomas Lange and Ms. Julie McGowan offer an overview of the history of the school and outline the highlights of its growth and development. Dr. Stanley Fowler, Associate Dean for Research and Graduate Studies, emphasizes the importance of basic and clinical research to the growth and vitality of a medical school, provides a view of the extensive commitment of the faculty to research efforts and emphasizes the amount of collaborative involvement both within and outside the School of Medicine. Dr. Howard Nankin, Director of the Division of Endocrinology, demonstrates how a clinical division can be productively involved in both basic and clinical research and contribute new concepts in clinical patient care. He emphasizes the importance of our affiliation with the WJB Dorn VA Hospital, one of the major affiliated teaching hospitals of the School of Medicine. Dr. Ronnie Neuberg and his colleagues of the Department of Pediatrics work closely with the Children's Hospital Center for Cancer and Blood Disorders of the Richland Memorial Hospital, another of our major teaching affiliates. They are engaged in exciting clinical research on childhood malignancies and ascribe much of their success to participation in national clinical cooperative trials. In addition, they describe their innovative approach to the management of the serious psycho-social problems which arise in the management of pediatric patients with cancer.

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[*] Professor and Chairman, Department of Medicine, University of South Carolina School of Medicine, Columbia, S. C. 29208.

Documented here, then, are but a few of the areas of excellence developed by the faculty of the School of Medicine. The overall effort to improve the health of the citizens of South Carolina is being met through the training of physicians, meaningful research and service to patients throughout the state. The first decade has been exciting, challenging, rewarding and productive, and everyone associated with the school eagerly looks forward to the challenges of the next decade. □

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DEAN'S MESSAGE

J. O'NEAL HUMPHRIES, M.D.*

The University of South Carolina School of Medicine is making real progress in its mission to improve the health of the citizens of South Carolina through education, patient care services and research. It has been said that Excellence is not a destination, but rather a journey; in many ways our mission is similar to Excellence. We have travelled a long way and accomplished much, but there is so much more yet to do.

We are enjoying our journey. We all feel a great sense of satisfaction and pride as we see young men and women develop the knowledge and skills of a physician, perform in an outstanding fashion during residency, and then enter the practice of medicine. Ralph Riley is practicing in Saluda, Jim Morrow in Taylors, Billy McNulty in Georgetown, Libby Baxley in Anderson, Ric Ackerman in Walterboro, Dave Culpepper in Timmonsville, Jerry Davis in Columbia, Susan Breeland in Columbia, Caughman Taylor in Rock Hill, Elaine Baxley in Rock Hill, Dave Price in Seneca, Luke Baxley in Hartsville, Ed Deschamps in Bishopville, Randy Saurez in Greer, and on and on.

We have matured as a faculty and been involved in many successful projects that contribute to the health of the community, especially the citizens of the Midlands. Faculty members have helped develop the Alzheimer's Day Care Center, the Child and Adolescent Depression Clinic, and the Sleep Laboratory at the Hall Psychiatric Institute. The faculty also has recently been asked to take responsibility for some of the most difficult units at the Department of Mental Health, including the Forensic Unit and the Adolescent Unit.

At Richland Memorial Hospital School of Medicine faculty members play a leadership role in such activities as the Trauma Team, Children's Hospital, pediatric oncology, gynecological oncology, the Eye Institute, Optifast (weight control of the seriously obese), the State Heart Clinic, the State Cancer Clinic and health screening projects for the elderly.

At Dorn Veterans' Hospital (DVH), School of Medicine faculty helped develop a top-rated outpatient service, nursing home, oncology ward, respiratory unit, alcohol treatment unit, diagnostic studies, hypertension clinic, and many other services. The affiliation with the School and the combined research capabilities of the VA and USC have played a significant role in recruiting skilled professionals to the staff of DVH. The Center for Developmental Disabilities, working closely with the South Carolina Handicapped Services Information System, has provided unique services to young people all over the state.

Finally, our faculty has been successful in acquiring new knowledge through research and applying this knowledge in the clinical setting. External funding for research by the School's faculty is now more than $5 million a year. This exceeds similar funding generated by any school or college at the University of South Carolina, with the exception of the College of Math and Sciences. In addition, faculty members on the staff of Dorn Veterans' Hospital have gotten more than $1 million per year in research support from the Veterans' Administration Research Department.

We are very proud of being 10 years old, and look forward with enthusiasm to our adolescence. ☐

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A BRIEF HISTORY OF THE SCHOOL OF MEDICINE UNIVERSITY OF SOUTH CAROLINA

R. THOMAS LANGE*
JULIE JOHNSON MCGOWAN**

Producing 22 graduates and lasting only eight years, the first medical school associated with the University of South Carolina admitted its inaugural class in 1867. Although it closed its doors in 1875, many of the reasons for its initial founding — the need to improve the availability of health care for the citizens of South Carolina through the education of more physicians, the efficacy of having a centrally located school affiliated with a major university, the desire of many government and business leaders to have a second medical school in the state — remained valid into the next century.

In the late 1950's and early 60's, the federal government perceived an impending crisis in the provision of health care for the citizens of the United States. In 1959, a consultants panel under the auspices of the Surgeon General of the Public Health Service published a report projecting a shortfall of physicians. In 1967, the General Assembly of the State of South Carolina reacted by passing a Joint Resolution, #622, which authorized the State Advisory Commission on Higher Education to appoint a committee of consultants to review the feasibility of a second medical school for the state.

The consultants' report entitled, "Medical Education in South Carolina," and later known as the "Lippard Report," established the need for a second medical school in the state based on national indices placing South Carolina at the bottom or near the bottom in its ability to provide adequate health care. It also suggested that the most appropriate location would be Columbia, affiliated with the University of South Carolina, and concluded by outlining the necessary steps for implementation of the concept, including initial planning, construction and operation of the facilities, staffing and requisite timetables. The "Lippard Report" was presented to the Commission on Higher Education in December, 1967. The Commission then issued a recommendation that the state move to establish a second medical school. However, the idea lay dormant for four years until a second report, also entitled "Medical Education in South Carolina," and generated by the Special Medical Education Committee of the Commission, was presented to Governor John West and the General Assembly, urging the state to provide the means for South Carolina to achieve a Carnegie Commission recommendation of 130 physicians per 100,000 population to insure adequate health care. South Carolina, in 1969, ranked 47th in the nation with a physician/population ratio of 81 per 100,000. The entire Commission on Higher Education agreed that obtaining the goal of increased physician/population ratio was indeed desirable.

Dr. Thomas F. Jones, President of the University of South Carolina, reacted to the opportunity and in responding to one of the tenets of the "Lippard Report," namely, that any proposed new medical school be allied with a major university, committed the University of South Carolina to work diligently toward the establishment of a second medical school in the state.

In December, 1971, Governor West went on record in support of a second medical school.

In July, 1972, Dr. William N. Adams Smith was hired as Vice-Provost for Health Affairs at the University. In addition to his responsibilities as head of the newly established division, he was also to spearhead the campaign for the creation of a proposed second medical school to be affiliated with the University.

A tremendous boost came with the passage of Public Law 92-541 on October 24, 1972. In essence the law authorized the Administrator of Veterans' Affairs to provide financial assistance for the creation of new medical schools, or improvement of those in existence, which would be affiliated with Veterans' Administration Hospitals. Up to $25 million for eight new schools would be made available to lease or renovate property, underwrite faculty salaries, and purchase equipment.

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With the passage of Public Law 92-541, the University of South Carolina, with the complete support of Governor West, began to draft a grant request seeking the federal monies. In May, 1973, reacting to a request from the University of South Carolina, the Senate Finance Committee appropriated $100,000 to establish a School of Public Health and a post-graduate School of Medicine. Thus the foundation for the creation of a second medical school was authorized by the legislature.

In July, the Veterans' Administration published the requirements for securing funding for any proposed new school. These included reasonable assurance that the school would receive full accreditation as a four year medical school, a commitment from the respective state that it would continue funding the school after the VA's obligation ceased, and an agreement between the parent institution and the local VA that the proposed school would be mutually beneficial. The following month, the University received approval from the Commission on Higher Education to seek federal funding.

On January 24, 1974, the University submitted its formal application to the Veterans' Administration, and in April, Governor West was notified that the application had been favorably received and awaited only formal endorsement by the South Carolina Legislature, including a commitment to provide the state's share of 48 percent of operating costs during the initial ten-year funding period. Governor West challenged the legislature "to make a down payment on a new day of health excellence in South Carolina." A formal endorsement was needed by June 1, 1974.

In May, Richland Memorial Hospital became the first of four potential hospitals to sign an affiliation agreement. (Other formal affiliations were later established with the Veterans' Administration Hospital, Hall Psychiatric Institute and Moncrief Army Hospital.) At the same time, the South Carolina House voted to retain $391,213 in first year operating expenses for the proposed school. And the State Chamber of Commerce went on record with its endorsement.

On May 29, 1974, the Senate Finance Committee voted unanimously to fund the new school. Two weeks later, the state received word that the Veterans' Administration had awarded a $25 million grant to the University of South Carolina to assist in the development of a school of medicine over a six-year period and with the passage of the Senate's Budget Bill on June 18, 1974, the University of South Carolina School of Medicine was born.

The VA monies had provided for the renovation of the old VA hospital complex as a permanent home for the medical school. However, renovations could not begin until the new VA hospital was completed. The school had received its "Letter of Reasonable Assurance" from the Liaison Committee on Medical Education (LCME) in October, 1974, and now found itself looking for a temporary home for offices, classrooms, and laboratories.

Richland County Council offered five buildings located in the Old Columbia Hospital complex. While the promise of immediate occupancy and an annual lease of one dollar offered some advantages, the projected $3 million in renovation costs outweighed other considerations. Finally, the University offered space and the medical school, though spread from one end of the campus to the other, had a temporary home.

A search for a permanent Dean was conducted throughout 1975 with Dr. Adams Smith, as Acting Dean, hiring most of the school's administrative officers and department chairs. Then, in December, 1975, Dr. Adams Smith resigned all of his administrative duties. Dr. Francis Abel, Chairman of the Department of Physiology and Pharmacology, was appointed Interim Dean in December, 1975, and the search for a new Dean was reopened.

The year following was a busy one for the new school. A start-up assistance grant request was submitted to the National Institutes of Health and in November, 1976, $420,000 was awarded to the new school to assist in the development of teaching programs and provide for the acquisition of basic health sciences informational materials.

A bequest from the Corbett Estate provided a half million dollars for student loans while the Division of Health and Environmental Affairs announced the availability of student scholarships for those who committed to practice in South Carolina following graduation. And a Capitation Grant from the Department of Health, Education and Welfare was received in July.

The Joint Commission on Accreditation of the AMA and the AAMC made a site visit to the new school of Medicine in April, 1976 and gave formal approval for the school to open in the fall, 1977, with provisional accreditation for an entering class of 24. Four hundred applications had been received for a place in the inaugural class, and although the official date of opening had been delayed one year, most students selected chose to wait to be part of the new school's first class.

At the time of the site visit, 41 faculty members had been hired, including all chairmen of the basic science departments and the Chairmen of Internal Medicine, Neuropsychiatry and Behavioral Science, Obstetrics and Gynecology, and Family Medicine. Recruitment continued for the remaining faculty positions, the Chairmen of Surgery and Pediatrics, and, in particular, the position of Dean.

During the summer of 1976, a Curriculum Symposium was held to formulate the initial curriculum and draft the guidelines for the philosophy of education the school would embrace during its early years. Concomitant to the Doctor of Medicine program, the framework for a Doctor of Philosophy degree program in the School of Medicine was also conceptualized and implemented.

The announcement on August 28, that the Veterans' Administration would construct a four-story, $3.1 million library building, relieved much of the long-range space problem for the new school.

In late July, Dr. Roderick Macdonald, Chairman of Ophthalmology at the Medical College of Virginia, was appointed Dean. A native South Carolinian and graduate of the Medical University of South Carolina, Dr. Macdonald assumed the position of Dean of the School of Medicine and Professor of Surgery (Ophthalmology) on September 1, 1976 and spent the first few months of his administration organizing the administrative arm of the School, hiring staff, appointing committees.

Faculty recruitment continued at an accelerated pace, and for those faculty members in place, the year in terms of research was a productive one, with over $300,000 in research grant support having been received by October, 1976.

Interested in fostering community support, the new school sponsored a number of educational symposia. And as a testament to its founding, and its dedication to preserve and protect the health of the citizens of the state, the Mission and Goals Statement, approved in June, 1977 by the Board of Trustees of the University, reiterated the school's primary purpose in its first statement: "The School of Medicine of the University of South Carolina was established to improve the health of the people of the state of South Carolina through medical education, research and the delivery of health care."

On August 29, 1977, 24 students matriculated to become the first class of the University of South Carolina School of Medicine. Many hurdles had been crossed and many achievements garnered, virtually all directed towards this singular day. And ten years after the drafting of the "Lippard Report," South Carolina had indeed finally embarked on the monumental undertaking of improving the health of its citizens through the growth of its physician population.

In the spring of 1979, the First Annual Carolina Cup Pediatric Symposium was held in conjunction with the running of the Carolina Cup Steeplechase in Camden, South Carolina. The Symposium, sponsored by the School of Medicine and co-sponsored by Richland Memorial Hospital, was the first in an annual symposium series that would become widely respected in the field of pediatrics.

On May 25, 1979, the First Annual Awards Banquet was given with three professors receiving "Teacher of the Year" awards. The same month, after much study and consultation, a revised curriculum for the Freshman and Sophomore years was approved.

In June, 1980, the School of Medicine Continuing Medical Education Program was accredited by the American Medical Association Council on Continuing Medical Education to grant AMA Category I credits for all of its programs retroactive to February, 1980.

The first annual Honors Day Convocation was scheduled for May 15, 1981 and Dr. A. McGehee Harvey, Editor-In-Chief of the *Principles and Practice of Medicine,* addressed the first graduating class with remarks entitled, "Is There a Doctor in the House?" As with matriculation, a number of notable South Carolinians were present when the members of the first graduating class received their hoods and were administered the "Oath of Hippocrates." The inaugural class graduated May 16, and went on to residencies, most in primary care fields.

In March, 1983, Dean Macdonald was replaced by Dr. J. O'Neal Humphries, Professor and Chairman of the Department of Medicine, who became the fifth dean of the school.

By early 1983, virtually all of the medical school departments were in permanent locations, and on Friday, September 30, 1983, the USC School of Medicine was officially dedicated in ceremonies in front of the renovated VA Hospital buildings. Previously, a decision had been made to split the medical school, with all basic science departments and some divisions of the Department of Medicine being housed at the VA complex; the Departments of Family Medicine, Obstetrics and Gynecology, Pediatrics, Surgery, and part of Medicine residing at Richland Memorial Hospital; and the Department of Neuropsychiatry and Behavioral Science remaining at the William S. Hall Psychiatric Institute.

On urging from Governor Riley, a Joint Health and Medical Education Board was formed, and a spirit of cooperation between the state's two medical schools began to evolve. The first meeting of the new board was held on July 19, 1983, and the primary thrust of the discussion centered on improved health for the citizens of South Carolina and set the direction for future meetings.

The Department of Pediatrics participated in another noteworthy event during this time. On September 28, 1983, opening ceremonies were held for the Children's Hospital at Richland Memorial Hospital. First suggested in 1981 by Dr. C. Warren Derrick, Jr., Chairman of the School's Department of Pediatrics and Director of Education for Pediatrics at Richland Memorial Hospital, the hospital-within-a-hospital concept was designed to "increase the quantity and quality of high technology medical care while providing an emotional and physical environment dedicated to the pediatric patient."

Also in the fall, Dr. Joan M. Altekruse, Chairman of the Department of Preventive Medicine and Community Health, announced that her department had been awarded a $300,000 grant to develop a Residency Training Program. Already provisionally accredited, the Program would admit its first residents for their two-year course of study in July, 1984.

In early 1984, the School of Medicine Department of Ophthalmology and the USC College of Engineering embarked on a cooperative venture funded by the Whitaker Foundation. The project, entitled "Material Properties of the Retina," was devoted primarily to measuring the retina's tensile strength and rigidity. This project not only demonstrated the potential spirit of cooperation that could exist between two diverse educational facets within the University, but also showed the necessity for integrating biomedical research and engineering.

Cooperative programs continued to be a byword for the School of Medicine and ranged from local and state research and rehabilitation efforts to faculty exchanges as far east as Egypt and west as China. However, perhaps the greatest evidence of the spirit of cooperation came on November 2, 1984, when, at a meeting of the Joint Health and Medical Education Board, the state's two medical schools agreed to a total combined enrollment of 200, with a potential savings to the state of millions of dollars. Under the agreement, ultimately the Medical University of South Carolina would admit 125 students each year, and the University of South Carolina School of Medicine would enroll 75 students.

The Department of Obstetrics and Gynecology, through its Division of Clinical Genetics, began to routinely offer genetic counseling services with prenatal diagnosis to high risk patients. Director of the Division, Dr. Robert Young, joined with geneticists from the Medical University of South Carolina and the Greenwood Genetic Center to form the South Carolina Genetics Conclave, soon to gain a reputation as the "best statewide program of genetic counseling in the southeast." And, as further proof of the excellence of the program, in May, 1985, a Genetics Counseling M.S. program, one of only ten in the nation, was approved for the Department.

During the same year, the Department of Pediatrics and Richland Memorial Hospital also received a major anonymous gift of $750,000 in support of pediatric cancer research. Called the "most important private donation to research at the USC School of Medicine and Richland Memorial Hospital in the history of the two institutions," the gift to the Richland Regional Medical Center Foundation established the South Carolina Endowment for Children's Cancer Research.

The 1985/86 academic year witnessed the institution of a Town Meetings program. Through the cooperation of the Columbia Medical Society, Richland Memorial Hospital, and the USC School of Medicine, and supported by the S. C. Committee for the Humanities and the Duke Endowment, Columbia area residents were invited to three separate "town meetings" to hear panels of experts address various topics in medical ethics.

Other outreach programs were begun during this period. Among them was a cooperative project between the Department of Family Medicine and Colonial Life and Accident Insurance Company. The Project, entitled "Time Out for Life," under the medical direction of Dr. Robert Mallin, Assistant Professor and member of the School's Charter Class, was designed as a wellness program which could be used by any area businesses.

In 1985, South Carolina ranked sixth in the nation in blindness, a substantial portion of which was caused by glaucoma. Late in the year, the School's Department of Ophthalmology was selected by the FDA to be one of approximately twelve academic medical centers in the nation approved to treat glaucoma with therapeutic ultrasound, a procedure found effective in pilot studies in 90 percent of patients with uncontrolled glaucoma.

The honors and recognition continue to grow and the applicant pool remains strong despite the national decline in the number of medical school applicants. The School's Admissions Office recently began an innovative recruitment program entitled "Role Models in Medicine." Supported by a grant from an anonymous donor, the goal of the project is to encourage South Carolina high school students to consider and plan for careers in medicine. Conceived by Associate Dean for Admissions, Dr. Robert Sabalis, the program is designed to reach out to students to emphasize the satisfaction of a medical career, and enable these students to become acquainted with physicians who will serve as role models.

The recently opened Alzheimer's Day Care facility at the Hall Institute is the only patient care facility of its kind in the region and has earned national recognition.

The list goes on and despite its 10 short years the University of South Carolina School of Medicine has established some traditions, built an excellent educational program, worked with affiliated hospitals to expand and improve clinical services to the area and state, built a promising medical research program, produced 277 medical doctors and eight Ph.D. degrees in the basic medical sciences and, indeed, truly begun fulfilling the primary tenets of its mission — to improve the health care of the citizens of South Carolina. ☐

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State flag of South Carolina

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RESEARCH AT THE UNIVERSITY OF SOUTH CAROLINA SCHOOL OF MEDICINE

STANLEY D. FOWLER, Ph.D.*

Since the Flexner Report[1] on medical education in 1910, research has been recognized as an integral part of the delivery of medical education.[2] Contribution to medical knowledge through research is an essential function of any medical school, and — as both students and faculty will readily acknowledge — a medical school's best researchers are invariably also the school's best teachers. Thus, development of a faculty with diverse research interests was and remains an important aspect of the growth of the University of South Carolina School of Medicine.

Even in its brief ten-year history, the USC School of Medicine has already succeeded in contributing to the national medical research scene. Substantial research programs are under way at the School of Medicine in a variety of disciplines and topics; faculty members have attained national and international recognition for their research activities conducted at the School of Medicine. Some faculty members serve as experts on National Institutes of Health Study Sections and other federal agency committees; others participate in cooperative international research projects. The School of Medicine has been host to both regional and international meetings on specific medical research topics. This year, for example, the School of Medicine sponsored the National Conference on Spectrum of Dementing Illnesses (Alzheimer's disease, Huntington's disease, cerebral vascular disorders, and AIDS) and the First International Symposium on the Interface Between Analytical Chemistry and Microbiology. In the past five years, the School of Medicine faculty tripled research funding, and in fiscal year 1986-1987 received 5.4 million dollars for biomedical research. Three quarters of that support came from national agencies through competitive grant applications.

RESEARCH ENVIRONMENT

This success in research stems in part from the advantages gained from close association with other graduate colleges of the University of South Carolina. For example, biochemistry is taught and research conducted by faculty affiliated with the Department of Chemistry. The Biochemistry faculty conduct basic research on glycoproteins, protein catabolism, metaloenzymes, blood proteins, regulation of gene expression, and biological mineralization; many have ongoing research collaborations with various School of Medicine faculty. Several bioengineering projects, related to cardiovascular disease and to detection of diseases of the eye, are under way between School of Medicine clinical faculty and researchers in the College of Engineering.

Additionally, the School of Medicine benefits from close affiliations with other institutions in Columbia. These include the W. S. Hall Psychiatric Institute, located adjacent to the South Carolina State Mental Hospital, with its superb facilities for adolescent and child psychiatric problems; and the W. J. B. Dorn Veterans' Hospital with its own research service that annually receives more than one million dollars in Veterans' Administration supported research projects. The latter range from investigations in endocrinology and infectious diseases to rehabilitation research in audiology. Sharing the same campus, Veterans' Administration staff and School of Medicine faculty interact extensively. School of Medicine affiliation with Richland Memorial Hospital, which is an active county general hospital, provides another setting for clinical research, especially in the arena of cancer therapy.

The School of Medicine can point to a number of sophisticated research facilities on its own campus. Besides unique instrumentation in individual research laboratories, the School of Medicine supports specialized facilities. These include the Electron Microscopy Laboratory which maintains three electron microscopes and all major ancillary equipment necessary for high resolution electron microscopy. A dual laser Coulter EPICS flow cytometer is housed in the School of Medicine cell sorter facility. This instrument's use is dedicated solely to basic and clinical research. The Center for Developmental Disabilities, operated through the Department of Pediatrics, maintains computerized data bases on developmentally disabled citizens and services available to them in South Carolina. A diverse population of handicapped individuals is evaluated through the Center's diagnostic clinic. The School of Medicine Data Center provides data and word processing needs and, in conjunction with the University of South Carolina Computer Services Division, maintains high speed access lines to IBM mainframe computers. A modern 60,000 volume medical library and an AAALAC accredited animal resource facility provide additional services essential for research on the School of Medicine campus. All basic research is carried out in modern new laboratories, construction of which was completed in 1983.

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The School of Medicine also sponsors an interdisciplinary graduate program leading to a Doctor of Philosophy degree in Biomedical Science. The curriculum includes course work in the same basic sciences required of medical students, but then directs the graduate students into specialized training in either anatomy, experimental pathology, microbiology and immunology, pharmacology or physiology. The goal of this training is to prepare the graduates to enter the ranks of a medical school faculty or to embark on applied research in pharmaceutical and other industries. Currently, 32 students are enrolled in the program.

RESEARCH PROGRAMS

As indicated above, research at the School of Medicine covers a variety of disciplines and topics. Presently, the most extensive research programs are on cardiovascular diseases. Research projects in this area are under way in more than half of the school's departments; many involve collaborative studies that cross departmental lines. Project topics range from the basic research on the interaction of extracellular matrix components, especially collagen, with cell surface receptors in the development of heart muscle and in the inception of functional stiffness in cardiac hypertrophy, to studies on the mechanics of coronary blood flow and ventricular arrhythmias. Other investigations focus on the pathogenesis of atherosclerosis, with one group investigating the possibility of a viral etiology of this disease. Another major project involves a sophisticated analysis of fluid transport across capillaries that has led to a challenge of past dogma on basic mechanisms of fluid transport. Collaborative clinical investigations include studies on cardiac preservation for transplantation, epidemiology of cardiovascular disease in rural South Carolina settings, and application of computerized digitized imaging analysis to select patients for coronary angioplasty.

Cancer research projects under way at the School of Medicine include basic investigations on the detection of oncogenes as a gauge of tumor potential, mechanisms utilizing both drugs and the body's immune system in fighting cancer, the relation of diet to cancer, and the physiology of smoking. Clinical research is directed towards clinical trials of chemotherapeutic agents, study of coagulation disorders often associated with cancer, and use of anti-emetic drugs for cancer patients.

A number of investigations at the School of Medicine center on infectious diseases and their treatment. These include development of targeting vehicles for the delivery of antivirals and immunostimulants to combat viral infections, studies of the pathology of viral infections and the making of viral proteins, mapping of the transport of bacterial breakdown products to body sites which result in rheumatic fever or inflammatory uveitis, and study of inflammatory mediators released from activated macrophages. Recent clinical studies have focused on the epidemiology of infectious diseases in the hospital setting and the treatment of surgical infections.

Neuroscience and behavioral research at the School of Medicine encompasses a wide variety of projects. Basic research studies include investigations on neuroendocrine control mechanisms involved in pituitary gland hormone secretion, cellular deficits in the amygdala which may play a major role in Alzheimer's disease, and development of brain tissue transplant techniques to replace degenerated tissues. Behavioral research projects include methods of identification of depressed children in the pediatric age group, recognition and assessment of suicidal thoughts and behaviors in childhood and adolescence, management of autism, and studies on alcohol and drug abuse.

Finally, a number of basic science faculty at the School of Medicine are conducting biochemical studies on the mechanisms involved in the regulation of cell function. Topics range from studies on mechanism of action of hormones such as glucocorticoids or opioid peptides, investigations on interactions of cell surface receptors and modulating proteins with hormones and growth factors, and experiments on how "second messengers" like cyclic AMP and cyclic GMP bring about changes in cellular function. These basic research questions often have very practical objectives such as improving effectiveness of drugs presently used to treat various diseases.

FUTURE TRENDS

In the future, investigations in all areas will depend more and more on the remarkable powers of recombinant DNA technology. With this conclusion in mind, a major effort is under way to train all of the research faculty at the School of Medicine in this new technology. This year 35 School of Medicine faculty participated in a recombinant DNA workshop presented by the American Type Culture Collection. The workshop is a week long laboratory intensive course on basic recombinant DNA techniques that is normally given in Washington, D. C. However, to better accommodate the USC faculty, special arrangements were made to have the course moved to Columbia for presentation at the School of Medicine student teaching laboratories. The workshop was supported by National Institutes of Health and local funds.

CLOSING REMARKS

This brief summation of the diverse research programs at the School of Medicine does not adequately describe the efforts of the faculty and the quality of their research, and space limitations preclude further details. Included in this journal issue, however, is a fuller description of some of the research programs alluded to above. They illustrate the relevance of biomedical research for the practicing physician and are good examples of the kind and scope of research activities presently under way at our institution. ☐

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THE TEN-YEAR ANNIVERSARY OF THE ENDOCRINE RESEARCH LABORATORY*

H. R. NANKIN, M.D.**
T. LIN, M.D.
J. OSTERMAN, M.D., Ph.D.
E. P. MURONO, Ph.D.
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The first Medical Service Laboratory at the Dorn Veterans' Hospital was established in 1975 when Dr. Tu Lin moved here from the Salisbury V.A. Hospital to pursue his interest in cyclic nucleotides. In 1977, Dr. Howard Nankin moved to the University of South Carolina School of Medicine from the University of Pittsburgh and assumed the responsibility of Director of Division of Endocrinology and Metabolism. They instituted collaborative research efforts dealing with production of testosterone from Leydig cells. *In vitro* techniques were established using first decapsulated rat testes, then isolated interstitial tissue cells, and then purified Leydig cells. In addition, related clinical studies were undertaken. With a large population of aging veterans, a series of investigations were initiated to evaluate reproductive hormone function in aging normal men. The group was enlarged when Dr. Juraj Osterman joined the faculty in 1978. His interests included clinical research and *in vitro* cellular function studies. He was followed in 1979 by Dr. Eisuke Murono, who had an extensive background in steroid hormone production and actions. He was able to use this experience in developing assays for precursor steroids of testosterone and for studying Leydig cell cytoskeleton function. This team remained intact until the arrival in 1985 of Dr. Joyce Haskell whose interests were in growth factors. The group was involved in this area and she added an extra dimension to the scope of these investigations. The group continues to share a joint facility, involving 3,500 square feet of space custom designed for this use, since 1981, on the first floor of the Dorn Veterans' Hospital Research Building. Support has come from the Veterans' Administration, the WJB Dorn Veterans' Hospital and the University of South Carolina School of Medicine. Research grants have been received from the National Institutes of Health, the Veterans' Administration, drug companies, the American Heart Association, and from the University of South Carolina.

Over the years we have had the excellent technical support of many young people. Four of our technicians became physicians, one became a dentist, and one obtained further training in public health and directs a hospital laboratory. One graduate student completed her Ph.D. studies in our laboratory and a second doctoral student is working toward her Ph.D. on a project also with Dr. Lin.

Clinical research began and continues to be a cooperative venture within the group. Initial studies began with *in vivo* infusions of human luteinizing hormone (LH) to assess the ability of the human Leydig cell to respond. The first study documented the doses of LH required, and the pattern of precursor and final product (testosterone) responses to three-hour LH infusions. It was technically easier to use human chorionic gonadotropin (hCG), given as single injections based on body weight, and the next paper reported the responses to hCG injections in normal young men, given in the morning or in the evening. The pattern of testosterone response was evaluated over the subsequent 72 hours, and there were differences in testosterone secretion if the injections were given in the evening versus the morning. These stimulation studies were extended to normal men, 65 years of age or older, and we found that in the older men there were virtually

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no responses of testosterone, or of the precursor steroids to intensive Leydig cell stimulation. Next, the diurnal rhythms for testosterone and several other steroids made in the testes in young men and in old men were studied and the rhythms were noted to be preserved in older men, although most steroid hormone levels were lower in the latter group. Precursor steroids were studied and no block in the final pathway to testosterone could be detected in older men. Thus, the defect appeared to be before pregnenolone. More recently, we demonstrated that even though total serum testosterone concentrations may not change significantly with aging, free and bioavailable testosterone do decline in men by middle age and beyond.[1]

In 1980, it became apparent to us that sexual dysfunction, in particular, impotence, was a major clinical problem in patients more than 50 years of age. The incidence of impotence increases with each decade thereafter. Protocols were developed to thoroughly evaluate men, in order to determine the likely causes of impotence, hoping to tailor specific forms of therapy to the most probable underlying etiology for each. Over the past seven years we have evaluated more than 500 men. They are assessed for psychologic causes, medications (including street drugs and alcohol), hormone abnormalities, vascular abnormalities, and neurologic disorders. In general, as men get older, more than one factor contributes to impotence. We are currently in the process of tabulating 110 items of information on each of the men we have studied. We have looked at the usefulness of treating impotent men who have borderline-low testosterone levels with chronic injections of testosterone. This study was done in a double-blind crossover fashion, and libido was improved in 100 percent of 10 men studied, and potency was definitely improved in 70 percent of the men — even though most of them had several factors contributing to their impotence. We began direct intracavernosal injections of papaverine and phentolamine, and have used this both as a diagnostic test in evaluating patients, and as long-term treatment for impotence. Men who fail to achieve erections after these intracavernosal injections are assumed to have cavernosal incompetence or very severe vascular insufficiency. The medications appear to work in about 90 percent of the subjects, and some of the men with vascular or neurogenic impotence prefer using this as long-term treatment. In order to evaluate the hormone changes after standard injections of intramuscular testosterone cypionate, multiple sampling studies were performed in 11 subjects on such therapy. We found that the standard dosage of 200 mg, given every two weeks, resulted in supraphysiologic elevations of circulating testosterone, biologically available testosterone, and estradiol for the first few days after the injections, subnormal values occurred a few days before the next biweekly injection.[2] We have proceeded to use smaller injections of the medication at weekly intervals and our preliminary results suggest that 50 or 75 mg given weekly maintains circulating testosterone levels within the physiologic range.

With Dr. Peter Kilmann we have evaluated group treatment of secondary erectile dysfunction in men with probable psychogenic impotence. We found that sex education and therapy markedly improved sexual function, lasting for more than six months in 80 percent of the 20 couples studied. Many of these men also had other possible etiologies for impotence. In the future, we plan to look at the hypothalamic-pituitary-gonadal axis in impotent low-testosterone men, since many of them appear to have inappropriately low circulating levels of luteinizing hormone.

Basic research, at the cellular and molecular levels, on how hormones regulate Leydig cell function will enable us to precisely define the defects that may occur with disease and aging. The hormone (extracellular messenger) carries the signal from the secretory site (e.g., luteinizing hormone from the pituitary gland) to the cell surface (Leydig cells). On the plasma membrane of Leydig cells are receptors that recognize the specific hormone and bind it. The combination of hormone with receptor initiates a messenger that moves inside the cells and carries out the effect of the tropic hormone. For LH/Leydig cell stimulation, cyclic AMP is a soluble second messenger that can diffuse throughout the cell, where it activates enzymes and leads to production of testosterone. We can now quantitate the enzymes involved in testosterone formation, the cell surface receptors, adenylate cyclase, cyclic AMP, protein kinase and many other enzymes. Purified testicular Leydig cells isolated from rodents have been used in more recent studies to evaluate the effects of aging on Leydig cell functions and the role of calcium on Leydig cell steroidogenesis.

Using Leydig cells from aged rats, we found that testosterone production was lower when compared with young rats and have identified the defects in older rats which cause the decreased testosterone formation.[3]

Both cyclic AMP and calcium have important roles as second messengers in mediating the action of hormones. In Leydig cells, the major effect of LH-stimulated testosterone formation is mediated by cyclic AMP. Recently we identified a new pathway which is also important in regulating Leydig cell steroidogenesis — a calcium/phospholipid dependent protein kinase (protein kinase C). This enzyme is different from cyclic AMP-dependent protein kinase. Direct activation of this enzyme by phorbol ester (a tumor-promoting agent) is associated with increased testosterone formation. Blocking the calcium channel with verapamil or with nifedipine will reduce testosterone formation. The calcium pathway is most likely important in modulating Leydig cell function *in vivo*.[4]

Most recently, we have investigated the role of growth factors on Leydig cell function. Insulin-like growth factors are a group of low molecular weight substances which have both acute insulin-like metabolic effects and long-term growth promoting effects. The structure and functions of insulin-like growth factors are similar to proinsulin. There are two types of insulin-like growth factors, IGF-I and IGF-II. The effect of growth hormone is largely mediated by IGF-I, also called Somatomedin C. We have found that IGF-I can enhance Leydig cell production of testosterone and that Leydig cells have specific, high affinity receptors for IGF-I. We have also identified the molecular structure of this receptor. This finding has important physiological ramifications and helps to explain why children with growth hormone deficiency also have delayed maturation since growth hormone deficiency is associated with low circulating IGF-I levels. Treatment with growth hormone increases IGF-I production and permits normal growth, increased androgen levels and the occurrence of spontaneous maturation. We have also found that IGF-I receptor numbers of Leydig cells can be increased by hCG administration. This suggests that hCG (LH-like) and IGF-I interact to enhance and maintain steroidogenic capacity of Leydig cells by up-regulation of IGF-I receptors. HCG has many actions other than stimulating Leydig cell steroidogenesis and can cause Leydig cell hyperplasia and hypertrophy, for example. Since IGF-I receptors can be increased by hCG, it is possible that growth promoting effects of hCG are mediated by IGF-I receptors. Future studies will evaluate the role of IGF-I on Leydig cell maturation and proliferation.[5]

Other studies are evaluating polyamines as possible mediators of hormonal stimulation in the testis. Polyamines (putrescine, spermidine, spermine) are organic polycations found in all prokaryotic and eukaryotic cells. Because of their positive charges, they can interact and modify the structure and function of many negatively charged intracellular macromolecules such as DNA, RNA and proteins. Although the physiological function of polyamines is still not well understood at the molecular level, many recent studies have shown that their concentrations are highly and specifically regulated and that normal cellular growth and differentiation require polyamines. The production of polyamines and their intracellular concentrations are primarily regulated by the activity of the two key biosynthetic enzymes, ornithine decarboxylase (ODC) and S-adenosyl-methionine decarboxylase (SAMD). Over the past seven years, specific inhibitors of these enzymes became available which can produce marked depletion of cellular polyamines. By employing inhibitors, one can then study effects of polyamine depletion on various cellular functions such as growth and differentiation. The study of polyamines and specifically the application of inhibitors such as difluoromethylornithine (DFMO) has already resulted in beneficial effects in some forms of human cancer and several dificult-to-treat parasitic infections. Our research focuses on the study of the activity of ODC and SAMD and their regulation by several hormones in rat testes and isolated Leydig cells. We have shown specific stimulation of ODC by follicle-stimulating hormone (FSH) and LH and age-dependency of this stimulation.[6, 7] Although LH enhanced both ODC activity and testosterone production at similar physiologic dose ranges, we found dissociation of the two cellular responses in terms of their temporal patterns of activity and the way they were affected by DFMO, and the protein synthesis inhibitor cycloheximide. These results suggest that there is no causal coupling between LH-stimulated polyamine synthesis and testicular steroidogenesis. More recently we have been investigating the role of polyamines in growth stimulation and differentiated functions of TM_3 cells, a cloned tumor cell line derived from the mouse Leydig cell. We have found that multiple hormones and growth-promoting agents stimulate and interact in the regulation of polyamine biosynthetic enzyme activities (ODC, SAMD).

Because alcohol abuse is associated with hypoandrogenism in males, we have focused on mechanisms by which ethanol directly inhibits androgen accumulation and production in rat Leydig cells. Previously, the major mechanism by which ethanol was proposed to inhibit testosterone production in Leydig cells was by inhibition of an enzyme, $\triangle^5 3\beta$-hydroxysteroid dehydrogenase-isomerase ($\triangle^5$-3β-HSD), which converts pregnenolone to progesterone; the latter functions as a precursor for testosterone. This enzymatic step requires NAD^+ as a cofactor, and the inhibitive action of ethanol was thought to result from the metabolism of ethanol to acetaldehyde by alcohol dehydrogenase (ADH) activity in Leydig cells. The ADH-mediated metabolism of ethanol involves NAD^+ as a cofactor, which is converted to NADH during ethanol metabolism. Thus, NAD^+ levels in Leydig cells are lowered, which, in turn, inhibits NAD^+-dependent $\triangle^5$-3β-HSD activity and reduces testosterone biosynthesis. We confirmed these actions by quantitating the direct effects of ethanol on pregnenolone conversion to progesterone, and by being first to identify ADC activity in Leydig cells. However, we showed also for the first time, that increased levels of NADH due to ADH metabolism of ethanol, enhances NADH-dependent conversion of dihydrotestosterone (DHT) to 5α-androstan-3β, 17β-diol (3β-diol), an inactive androgen. Because DHT is considered as the active androgen in many androgen-responsive tissues (testosterone is converted to DHT), ethanol would reduce the availability of DHT in the testes and other androgen target tissues. For example, we found that ethanol stimulated DHT conversion to 3β-diol in liver cells.[8] In addition to ADH activity in Leydig cells (which is localized in the soluble fraction of cells), we identified for the first time a microsomal ethanol-oxidizing system (MEOS) which is involved in ethanol metabolism. Current studies are examining the steroidogenic capacity of neonatal and immature rat Leydig cells after growth in tissue culture. It is hoped that these models will serve as tools to examine how the differential expression of steroidogenic enzyme activities are regulated during Leydig cell maturation.

Specific binding of IGF-I and IGF-II occurs on a variety of vascular tissues, particularly detergent soluble extracts of human retinal tissues, isolated renal glomeruli, and the testicular artery. In addition, IGF-I receptors are demonstrable using covalent cross-linking analysis and inhibition of IGF binding with specific anti-receptor antibodies in tissues such as rat renal tubules and glomeruli, rat colon, rat neonatal cardiomyocytes, rat Leydig cells, and human retinal cells.[9] Preliminary studies using minute amounts of vascular tissue have enabled us to investigate receptors in a number of different tissues, in which IGF binding was previously undetectable, using techniques similar to procedures for examining peptide hormone receptors.

In summary, our studies at both the basic science and clinical levels have led to a better understanding of normal testicular function and abnormalities which develop with advanced age. In some cases, therapy for certain causes of impotence have been developed. Our group has made a major commitment to tissue culture of Leydig cells. We are currently growing long-term tumor cell lines, and we do short-term (up to seven days) cultures of rat Leydig cells. This approach will enable us to study such things as aging cell growth, cell multiplication, and the long-term effects of various drugs and treatments. We hope that the next 10 years will be as successful as the last decade. □

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WILMS' TUMOR: A MEASURE OF PROGRESS*

RONNIE W. NEUBERG, M.D.**
ROBERT S. ETTINGER, M.D.***
WILLIAM F. SCHMIDT, III, M.D., Ph.D.***

Pediatric oncology is a field of medicine which has experienced remarkable growth and development during this century. As recently as 30 years ago, most children diagnosed with cancer, and virtually all children with disseminated disease, died. Today nearly two-thirds of our young cancer patients enjoy prolonged disease-free survival (DFS) and the probability of cure. Much of this success can be attributed to the scientific and technological advances which have benefitted medicine as a whole. Furthermore, successful treatment is in part due to fate — the good fortune that most pediatric malignancies are sensitive to radiation and a variety of the available chemotherapeutic agents. However, essential to our current state of knowledge was the development of a clinical research methodology uniquely suited to pediatric oncology. This methodology, the *clinical cooperative trial,* was established in 1955 by the National Cancer Institute to test the clinical efficacy of new chemotherapeutic agents. By gathering data from multiple institutions utilizing a common treatment protocol, statistically significant conclusions could be drawn more rapidly. Clinical cooperative trials soon became the mainstay of pediatric oncology research because of the relatively low incidence of childhood cancer.

For several reasons, Wilms' tumor graphically illustrates how advances in science and technology and the evolution of this sophisticated clinical research process have transformed a universally fatal disease into a curable one (Figure 1). It is a rare disease with an incidence of approximately 500 new cases diagnosed annually in the United States. There are so few patients available for study that in 1969 the three existing pediatric cooperative groups joined forces to establish the National Wilms' Tumor Study (NWTS), the first intergroup effort of its kind. In addition to being a model of cooperation among institutions, it is an example of coordination of care among disciplines. As described below, the treatment of Wilms' tumor involves a multimodal approach utilizing input from surgery, radiation therapy (RT), and chemotherapy (CT). Through close interdisciplinary coordination, advances in one modality occasionally have altered the role of another. Finally, the growth of the population of cancer survivors mandates that issues of quality of life, adverse late effects and the establishment of minimal effective therapy be addressed.

The epidemiology, presentation, and work-up of Wilms' tumor are discussed elsewhere[1] and will receive only brief attention. Instead, this discussion will focus on Wilms' tumor as a model for: (1) the success of multi-institutional clinical research, (2) coordinated, multidisciplinary care and, (3) the importance of identifying prognostically significant variables as a guide for tailoring therapy.

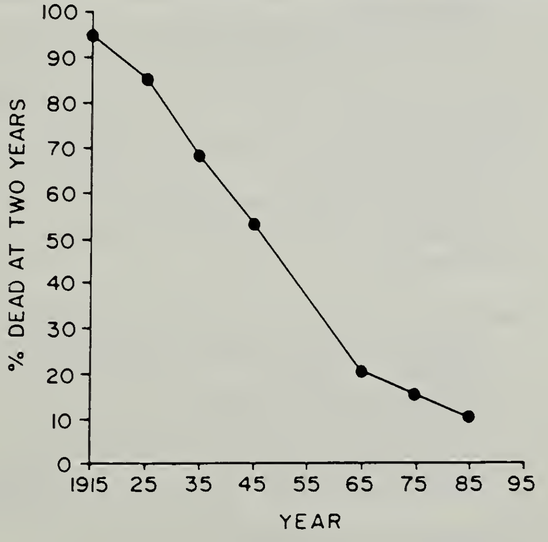

Fig. 1. Death rate from Wilms tumor, 1915–1985.

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Wilms' tumor, the most common pediatric abdominal malignancy, has an annual incidence of 7.8 cases per million children. First described as a pathological entity by Max Wilms in 1899, it usually occurs in children between the ages of one and five years with a peak incidence of three years. By far the most common presenting symptom is an abdominal mass (90%), often first discovered by a parent. Hematuria, hypertension, and systemic symptoms such as fever, malaise, and anorexia are less frequent.

The laboratory evaluation of the patient with suspected Wilms' tumor includes computerized tomography of the chest, abdomen, and pelvis, a complete blood count, urinalysis, renal and liver function tests, and urinary catecholamines. Intravenous pyelography, inferior vena cavagraphy, ultrasonography, radionuclide bone imaging and bone marrow aspiration and biopsy may also be useful.

STAGING

The purpose of staging a solid tumor is to define subsets of patients who could potentially benefit from different therapeutic approaches. Once a staging system is established, patterns of relapse may dictate alteration in the staging guidelines.[2] Such is the case with Wilms' tumor. Table I shows a comparison of the grouping and staging methods utilized in NWTS-1 and 2 and NWTS-3 and 4, respectively. Two major differences between the staging systems exist. First, it was found that local tumor spillage or biopsy at the time of initial surgery was not sufficient reason to upstage a patient from II to III. Second, because patients with totally resected, microscopic nodal involvement were found to be more likely to develop local or distant recurrences and die of their disease, they were upstaged from II to III.[3]

HISTOLOGICAL CLASSIFICATION

Central pathological review is essential for multi-institutional, clinical trials to ensure that all patients entered on study meet the histologic criteria for the disease. For example, in the NWTS-2, 15 of 755 patients (2%) entered were found on pathological review to have diagnoses other than Wilms' tumor. Another benefit from this process has been the identification of prognostically significant histologic subtypes.[4] Based upon 426

TABLE 1

	Group from NWTS 1 & 2		Stage from NWTS 3 & 4
I	Tumor limited to kidney and completely resected •Capsule intact •No microscopic residual tumor	I	Tumor limited to kidney and completely resected •Capsule intact •No microscopic residual tumor
II	Tumor extends beyond the kidney, but is completely resected •Local extension - penetration through the pseudo capsule •Extrarenal vessel involvement •Completely resected periaortic nodal involvement	II	Tumor extends beyond the kidney, but is completely excised •Local extension - penetration through the pseudo capsule •Extrarenal vessel involvement •Biopsy of tumor or local spillage during surgery
III	Regional residual tumor confined to abdomen •Rupture or biopsy of tumor before or during surgery •Peritoneal tumor implants •Lymph nodes beyond the periaortic chain are involved •Incomplete resection due to tumor invasion	III	Residual non hematogenous tumor confined to abdomen •Any lymph node involvement •Diffuse peritoneal spillage •Peritoneal tumor implants •Microscopic or gross residual disease
IV	Hematogenous metastases	IV	Hematogenous metastases
V	Bilateral involvement	V	Bilateral involvement

pathological specimens analyzed from NWTS-1, two distinct histopathological categories were identified — so called favorable and unfavorable histology. Unfavorable histology (UH) was characterized by either focal or diffuse anaplasia or sarcomatous changes. It was associated with a significantly worse prognosis than favorable histology (FH) constituting only 11.5% of the study population, but identified in 52 percent of the patients who died. Subsequent NWTS's have confirmed that histology is the most powerful prognostic feature of Wilms' tumor when the data are subjected to multivariate analysis.[5]

The major sarcomatous varieties have since been reclassified as two distinct, non-Wilms' tumors. Clear cell sarcoma of the kidney has an increased propensity to metastasize to bone and has responded well to UH Wilms' tumor treatment (75% DFS). However, the rhabdoid tumor which also arises in non-renal sites, has an extremely poor prognosis (19% DFS) with such treatment. Thus, clear cell sarcoma remains eligible for study in the latest NWTS, but rhabdoid tumors have been eliminated and will require other innovative approaches.

TREATMENT

Surgery, initially hampered by high operative mortality, has remained the mainstay of therapy for Wilms' tumor. As intra-operative techniques, anesthesia and postoperative care improved, surgical cures were realized in nearly 30 percent of patients by 1930.[6] Surgical management now entails an aggressive, transabdominal approach to the primary tumor, careful inspection of the contralateral kidney and the liver and sampling of all suspicious nodes.

By the early 1950's, it was discovered that postoperative RT improved the survival rate to 50 percent.[6] Surgeons and radiotherapists were subsequently joined by a third member of the treatment team — the chemotherapist. Routine postoperative RT and CT with either vincristine (VCR) or actinomycin-D (AMD) became the standard of care for all Wilms' tumor patients. Survival rates increased to 80 percent,[7] but several important questions arose. Which chemotherapeutic agent was more effective? Could survival be improved by combining the two drugs? Was RT necessary for all patients? Issues such as these prompted the development of the NWTS group.

Three National Wilms' Tumor studies have now concluded patient entry and a fourth is currently in progress. The therapeutic design of each study was built upon the results from the previous one(s). Table II summarizes the major findings from the first two studies. In NWTS-1[8], RT appeared to improve survival of group I patients two years of age or older who received AMD but was unnecessary for similarly treated group I patients less than two years of age. NWTS-2[9] showed that the combination of VCR and AMD eliminated the need for RT in all group I patients regardless of age. Furthermore, six months of CT were equivalent to 15 months for this patient population. For higher group patients, it was demonstrated that the addition of a third drug, doxorubicin (DOX), was superior to single or double agent therapy.

Detailed correlation of the patients' clinicopathological characteristics with outcome in NWTS-1 and NWTS-2 refined the staging system[2] and established the significance of histology as a prognostic variable[4] as noted above. Once enhanced homogeneity of groups of patients with similar prognostic features was achieved, NWTS-3 and NWTS-4 sought to investigate more aggressive therapy for high-risk patients and reduced or simplified therapy for low-risk patients. For example, as noted above, NWTS-2 showed that the addition of DOX to VCR, AMD and RT improved the outcome for Group II patients. NWTS-3 removed patients with nodal disease and UH from Stage II and showed that the 90 percent DFS achieved with VCR and AMD was not enhanced by adding DOX or RT. Stage III patients, however, fared significantly better when DOX was added to VCR, AMD and RT (88% vs. 77% DFS). Thus, by recategorizing patients with nodal involvement or UH, Stage II/FH patients were spared unnecessary toxicities. NWTS-4 is currently evaluating the optimal length of therapy, the possiblity of administering AMD as a single dose instead of five daily doses and whether intensifying "up-front" therapy will improve survival.

LONG-TERM EFFECTS OF THERAPY

"The society which fosters research to save human life cannot escape responsibility for the life thus extended. It is for science not only to add years to life, but more important, to add life to years."[10]

As more effective therapy has emerged in the treatment of childhood cancer, the quality of life of survivors has received increasingly more atten-

Table II

National Wilms' Tumor Study
Outcome by Randomized Groups and Regimens*†

Group and Regimen‡	**No. of Patients**	**4-Year RFS (%)**	**4-Year Survival (%)**
NWTS-1			
I <2 years old			
A (RT)	38	89 (P=0.85)	94 (P=0.46)
B (no RT)	41	88	90
I ≥2 years old			
A (RT)	42	76 (P=0.06)	98 (P=0.015)
B (no RT)	42	57	81
II/III			
A (AMD)	63	57	71
B (VCR)	44	57 (P=0.01)	71 (P=0.01)
C (AMD + VCR)	63	79	84
Group and Regimen‡	**No. of Patients**	**3-Year RFS (%)**	**3-Year Survival (%)**
NWTS-2			
I E (short)	106	96 (P=0.21)	97 (P=0.15)
F (long)	109	90	91
II/III/IV C	159	65 (P=0.0006)	74 (P=0.06)
D (+ADR)	155	79	84

* Data from D'Angio, Beckwith, Breslow, et al.[8]

†Key: RFS = relapse-free survival; RT = radiation therapy; AMD = actinomycin D; VCR = vincristine.

‡Regimen IA = postoperative actinomycin D (AMD) for 15 months plus irradiation (RT); IB = postoperative AMD for 15 months without RT; IE = postoperative AMD + vincristine (VCR) for 6 months without RT; IF = postoperative AMD + VCR for 15 months without RT. Regimens II/III/(IV): A = postoperative RT + AMD for 15 months; B = postoperative RT + VCR for 15 months; C = postoperative RT + AMD + VCR for 15 months; D = postoperative RT + AMD + VCR + doxorubicin for 15 months.

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tion. Acute toxicity and treatment-related mortality can be entered into the risk:benefit ratio with relative ease. However, when considering years and decades of survival following highly toxic treatment modalities, systematic long-term follow-up is essential to identify, treat and, ultimately prevent late effects.

Concern for late effects of treatment for Wilms' tumor surfaced soon after postoperative RT was routinely employed. In a paper published in 1952, Neuhauser et al,[11] recommended extending the radiation field across the midline to include the entire vertebral body. While violating the dogma that normal tissue be spared the effects of radiation, this technique eliminated asymmetric growth of vertebral bodies and the risk for scoliosis in the growing child.

The NWTS Group has undertaken a long-term follow-up study to gather data on patients surviving their disease. Although comprehensive in scope, this study focuses particular attention on the late occurrence of second malignancies, benign tumors and gonadal dysfuntion. It is also monitoring for cardiac dysfunction in those individuals who received known cardiotoxins such as DOX.

In addition to identifying the long-term physical sequelae of cancer treatment, the psychosocial impact of having cancer must be addressed. A variety of methods can be used to accomplish this goal. At the University of South Carolina School of Medicine (USCSM), the Division of Pediatric Oncology has developed a team approach to this problem. At diagnosis, the *mental health clinical nurse specialist* assesses the family's support systems and coping mechanisms and provides the parents didactic information on the psychological care of seriously ill children and their siblings. She also offers individual, family or group counseling for patients or families in need of additional support. The *child life specialist* helps familiarize the patient with the hospital environment, personnel and procedures which are encountered during the course of the illness. She supervises group medical play in the outpatient setting, which enables patients to express themselves in non-threatening surroundings. Simultaneously, an ongoing parent support group is conducted by the social worker and members of the nursing staff. An adolescent program, "*Lasting Impressions*," has been developed to help teenagers adjust to living with cancer while coping with normal, age-related issues such as intimacy and independence. Using information from all these activities, families with particular needs are identified and solutions are coordinated through a biweekly, multidisciplinary psychosocial conference.

Maintaining the child's school performance is an essential component of comprehensive psychosocial care. Whenever therapy dictates prolonged school absence, a *hospital-based teacher* continues the inpatient student's education and upon discharge a *nurse practitioner* (NP) makes prompt referral for homebound teaching. Once the child is able to return to the classroom, the NP visits the school and provides information to the principal, teachers, nurses, and sometimes classmates about the child's illness, therapy, and side effects. The objective of this program is to enable school officials to make realistic demands on the child's educational performance and enhance normal peer interactions. In doing so, an important liaison is established between the school and the treatment team should future problems arise.

Clearly, the potential exists for children who are treated for a chronic, life-threatening disease to suffer long-term psychological sequelae. The effects of the illness on their self-image, their parents' expectations, their interactions with peers and their school performance may well have a deleterious impact on their ultimate ability to achieve their potential. Implementing psychosocial interventions and testing their efficacy are necessary adjuncts to current medical care.

CENTRALIZED COMPREHENSIVE CARE

William Dock (1898-), in a symposium entitled *The Next Half Century in Medicine*, accurately described the components which have made possible the delivery of comprehensive care:

"The physician must look beyond the picture, now widely cherished, of the lonely, great-hearted doctor, bowed impotent beside the dying child. Modern transportation, modern methods of communication, and modern techniques of diagnosis and treatment, have made that picture as obsolete as the village blacksmith at his charcoal forge."

This new image is reflected by the discipline of pediatric oncology in general and by the program at the USCSM specifically. First, our pediatric oncologists are not "lonely doctors," but members of a multidisciplinary team including *pediatric surgeons, radiation oncologists, radiologists, pathologists, specially trained nurses, psychosocial specialists* and, most importantly, the *referring physician*. Second, transportation has provided patients from all over the state of South Carolina ready access to a regional care center. Third, communication among the members of the team and with referring physicians has enhanced coordination of often complex care delivery. Furthermore, modern communication enables us to rapidly exchange data and results with the Children's Cancer Study Group, the largest national organization committed to pediatric oncology research. This association guarantees that current methods of diagnosis and treatment are available to our patient population. Finally, basic science research, the foundation of future clinical trials, is pursued at the Division's Children's Cancer Research Laboratory.

The treatment of Wilms' tumor is a symphony which stands as a model for all childhood cancer. The score is the clinical cooperative trial, composed and subsequently modified by accomplished musicians. The orchestra is conducted by the statisticians who ensure adherence to the score and analyze its performance. The musicians are the basic scientists, clinical researchers and the vast array of cancer care providers who work in concert to produce the sweet sounds of success. ☐

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